6.1 Introduction to the Department and Programs

MISSION STATEMENT
The role of the Department of Computer Science and Information Systems is to maintain and administer two undergraduate academic programs in computer science and information systems and one graduate master’s program in Computer Science. The purpose of these academic programs is to educate students pursuing a career in the varied fields of computer science and information technology; to educate quality computer science teachers for service in the public schools and institutions of higher education; to prepare students for advanced graduate study; to support the technological educational and training needs of local industry; to provide basic computer science service courses for the University. Furthermore, it is the goal of this department to create an environment in which students will develop their intellectual curiosity, analytical abilities, and computational and communication skills in preparation for independent and life-long learning. It is desired that this department become an important educational resource for Northeast Texas attracting students and research activities from industry and business.

PURPOSE OF PROGRAM
The Department of Computer Science and Information Systems offers Bachelor of Science degrees in Computer Science and in Computer Information Systems. The degree in Computer Science prepares students for a variety of positions within this diverse field. Students with this major complete a set of computer science core courses plus three advanced courses. They may use these electives as a concentration in database systems, information assurance and security, software development or networking. This curriculum is designed to prepare the student for a range of career choices such as database administrator or developer, network administrator, security specialist, software developer, system analyst/designer, technical writer, or web developer. The degree in Computer Science prepares students for a variety of positions in the field of information technology. Students with this major complete a combination of computer science and information systems core courses plus three advanced courses in information technology. Typically they may use these electives for a concentration in database management, networking and security, or application software development. This curriculum is designed to prepare the student for such career choices as system developer, database application programmer, network administrator, technical writer, or web developer. The department also offers a Bachelor of Science in Computer Information Systems with secondary certification in Computer Science for teaching computer science at the secondary school level. In addition the department offers second majors and in computer science and computer information systems as well as a minor in computer science to develop computing proficiencies complementary to their first major.

The purpose of the Department of Computer Science and Information Systems is consistent with the Mission of the Department (please see above). The role of the Department of Computer Science and Information Systems is to maintain and administer two undergraduate academic programs and one
graduate academic program in computer science and information systems. The undergraduate degree programs are listed as Computer Science (CS) and Computer Information Systems (CIS). The Master's program is listed as Master of Science (MS) in Computer Science. The first goal of these academic programs is to educate students pursuing a career in the varied fields of computer science and information technology. There is a wide range of topics and specialties within the realm of Computer Science and Computer Information Systems. There is the field of (1) General Programming, which includes algorithm design and the design of efficient algorithms. Students learn programming languages (JAVA, C++, C#) and the various problem solving techniques that comes with the discipline of computer programming. Our programming students are very much in demand by industry involved in engineering and communications. There is the field of (2) Networking, which includes communications, protocols, and networking security. The demand for our students trained in this area has greatly increased in the last 10 years as the communications industry has embraced digital technology. There is the general specialty of (3) Database and Information Systems, which includes the creation, theory and operation, and maintenance of database systems, and web-based interfaces to the database systems. There is the general specialty of (4) Artificial Intelligence which includes the theory and implementation of computational tools that help solve qualitative problems that do not fit within a set of mathematical formula. These tools include neural networks, data mining, adaptive algorithms, simulation, pattern recognition, and statistical tools. This field is closely aligned with High Performance Cluster Computing which utilizes the tools found in artificial intelligence to help solve problems.

Secondly, a goal of our department is to educate qualified computer science teachers for service in the public schools and institutions of higher education. Our efforts have produced a number of teachers who work in the public school system.

Consistent with our third goal, that of preparing students for advanced graduate studies, we have also produced a number of Master's students who go on to achieve a doctorate in Computer Science and teach at the college level.

Our fourth goal is to support the technological educational and training needs, graduate and undergraduate, of local industry. We have already discussed above the demand of industry for our students. In close proximity to Texas A&M University-Commerce are industries involved in electronics, engineering, and aviation. Our department has a close working relationship with many of these companies.

Finally, because computing is involved in all aspects of modern society, a fifth goal is to provide basic computer science service courses for the University.

In summary, this department attempts to create an environment in which students will develop their intellectual curiosity, analytical abilities, and computational and communication skills in preparation for independent and life-long learning. It is desired that this department become an important educational resource for Northeast Texas attracting students and research activities from industry and business.
The Department of Computer Science and Information Systems has three degree programs: B.S. in Computer Science (CS) program, B.S. in Computer Information Systems (CIS) program, and M.S. in Computer Science (MS) program.

The learning outcomes (program objectives) of the **Computer Science Degree Program** are as follows:

Program Objective #1 (PO1): Students will develop skills in problem analysis.
Program Objective #2 (PO2): Students will develop problem-solving skills.
Program Objective #3 (PO3): Students will develop solution-modeling skills.
Program Objective #4 (PO4): Students will develop solution-implementation skills.
Program Objective #5 (PO5): Students will develop strong communication skills.
Program Objective #6 (PO6): Learn common algorithms and how to analyze them for efficiency.
Program Objective #7 (PO7): Understand the concepts used in modern computer technologies.

The learning outcomes (program objectives) of the **Computer Information Systems Degree Program** are as follows:

Program Objective #1 (PO1): Students will develop skills in problem analysis.
Program Objective #2 (PO2): Students will develop problem-solving skills.
Program Objective #3 (PO3): Students will develop solution-modeling skills.
Program Objective #4 (PO4): Students will develop solution-implementation skills.
Program Objective #5 (PO5): Students will develop ethics and strong communication skills.
Program Objective #6 (PO6): Learn common algorithms and how to analyze them for efficiency.
Program Objective #7 (PO7): Understand the concepts used in modern computer technologies.

**Assessment Methods:** List the methods used to assess student mastery of these outcomes.

**General Assessment Plan for Graduate and Undergraduate Degree Programs**

**Program Embedded Assessment**

The following is a description of the assessment program for the Computer Science Master's Degree Program, the Computer Science Bachelor of Science Degree, and the Computer Information Systems Bachelor of Science Degree. The assessment program contains: a) an overall comprehensive testing component; b) a course-embedded assessment component; c) a non-quantitative data gathering component.

A. Overall Comprehensive Testing Component

Currently, the Computer Science Master's program requires the successful completion of a comprehensive exam as a prerequisite for the Master's Degree. This exam is given three times a year (in the Fall, Spring, and Summer semesters). The exam is developed and administered by a committee of graduate faculty. A set of the most important course objectives are selected (see Course Embedded Assessment, Section B) for examination. Testing for these objectives are translated into a set of questions and administered. The results are translated into a percentile of those passing and failing by objective, and a list of those students passing or failing the exam. The criteria for passing are determined by the committee. Such criteria is based on the overall performance of students taking the exam. The report of the percentile of those passing or failing by objective will be used as feedback in re-evaluating techniques used in teaching these objectives.
Starting in the Spring Semester, 2002, a comprehensive exam will be also given to students graduating from the Computer Science and the Computer Information Systems Undergraduate Programs. The exam will be constructed by a committee of undergraduate faculty. It shall be a one or two hour exam and shall be given in the final days of the senior course, CSCI 440. Unlike the graduate comprehensive exam, the undergraduate comprehensive exam will not be required for graduation. It will be used only for program evaluation. The comprehensive exam will be developed and administered by a committee of undergraduate faculty. A set of the most important course objectives will be selected (see Course Embedded Assessment, Section B) for examination. Testing for these objectives will be translated into a set of questions and administered. The results will be translated into a percentile of those passing and failing by objective and will be used as feedback in re-evaluating techniques used in teaching these objectives.

Instead of using an in-house comprehensive exam, the option is reserved for a utilizing a nationally administrated exam that would nationally rank participants.

B. Course Embedded Assessment Component

The purpose of embedded assessment is to measure the degree of success in which each course objective has been met. Starting in the Spring 2003 semester, the comprehensive exam for both graduate and undergraduate students will contain embedded assessment of program objectives.

1. The most important course objectives (see Section II below) will be selected from objectives listed in core courses for both the graduate and undergraduate programs. These important objectives will comprise the overall program objectives. The selection will be made by the Graduate Curriculum Committee and Undergraduate Curriculum Committee.

2. These overall program objectives will be embedded in one of more questions given in the Graduate Comprehensive Exam and in the Undergraduate Comprehensive Exam. A passing grade on the Graduate Comprehensive Exam, as determined by the Graduate Curriculum Committee, is required for student graduation. The Undergraduate Comprehensive is not a requirement for graduation. The assessment for each objective is a percentile of the total maximum score is a similar manner that course objectives are measured. For example, is Program Objective #1 is measured by two 10 point questions and a total of 10 students take the exam, then a total maximum score for Program Objective #1 will be 200 points. If a total of 175 points is scored for Objective #1, then the overall assessment for Objective #1 is 87.5%. See Appendix A for a more detailed example.

3. Program Objectives will be divided into two categories: Category (A) 75% or greater; and Category (B) less than 75%. Objectives in Category A will be considered successful while objectives in Category B will be considered unsuccessful. The report submitted by the instructor shall include steps being taken to better emphasize and teach objectives falling into Category B.

C. Non-quantitative Data Gathering Component

A non-quantitative data gathering component shall also be part of the program assessment. This component consists of the following:
1. Exit interviews with graduating students.
2. Compilation of job positions and salaries offered to graduating students.
3. Interviews with employers of graduates.
4. Interviews with potential employers of graduates.
The purpose of these interviews are to keep informed of changes in employment patterns as we continually adjust our computer science and information systems curriculum to meet the needs of the workplace.

OVERVIEW OF PROGRAMS

Admission Requirement
Admission for study in the Computer Science department is consistent with the Texas A&M University–Commerce admission policies for first time freshman, concurrent enrollment for high school seniors, and for transfer from an accredited institution of higher learning.

Curriculum Development Process
Curriculum guides produced by the ACM/IEEE professional associations provide the foundation for our undergraduate program. Further enhancements have been guided by an external advisory group and by the ACM special interest group on computer science education (SIGCSE). A departmental curriculum committee considers and submits proposed changes in programs, courses and content. This committee is usually composed of two fulltime undergraduate faculty members plus a member of the graduate faculty. The process for undergraduate curriculum evaluation and development has been informal. Surveys and comparisons with similar institutions and programs are conducted irregularly. The Computer Science and Computer Information Systems programs overlap to some degree leading to group interaction over common courses. Where there is little overlap in course responsibilities, proposals from individual faculty members are discussed by committee members and typically recommended for change.

The undergraduate curriculum committee monitors the ACM and ABET web sites for changes in ACM curriculum recommendations and ABET requirements. When new recommendations or requirements are issued, the committee meets to consider how best to incorporate any new recommendations and requirements into the existing curriculum. Requests to the coordinating board for curriculum changes to the next academic catalog are submitted toward the beginning of each fall semester, so a curriculum review is typically done at this time to determine whether any changes are necessary. Any faculty member may submit a suggestion or request to be considered by the committee. A representative from the student ACM chapter has been added to the committee in an advisory capacity to provide input from the students’ perspective.

Advisement Plan and Orientation
Incoming freshmen and transfer students attend a Student Access and Success orientation session where they are assigned to a success coach who monitors their progress for their first year. At the orientation they also meet with an advisor from their major department. The advisor explains the choice of degree programs to the student and provides the student with a copy of the requirements for each program and information about prerequisites and course sequencing. Based on the student’s high school record or transfer courses, the advisor recommends a schedule of courses for the student’s first semester. The student is assigned to a specific advisor based on the last digit of their ID number and is asked to check with that advisor to plan for future semesters.

Degree Plans
The degree plans for B.S. in CS and B.S. in CIS are shown in the following pages to show the requirements for baccalaureate degrees in each program.
## Bachelor of Science in Computer Information Systems

### Required Major Courses: 39-41 hours
- CS 351 Programming Fundamentals II (prereq: 151)
- CS 233 Object-Oriented Business Programming
- CS 241 Machine Language & Computer Organization
- CS 251 Intro to Information Security, Law, and Ethics
- CS 270 Data Structures
- CS 340 Intro to Database
- CS 434 Intro to Local Area Networks
- CS 359 Systems Analysis and Design
- CS 380 Web Programming and Interface Design
- CS 440 Applied Software Project Development

#### plus 3 technical electives in any one of these specialized areas
(choose Database Management, Networking, Programming, or General):

### Database Management Track
- CS 470 Database Programming
- CS 471 Database Administration
- CS 414 UNIX Network Administration

### Networking Track
- CS 342 Routers & Routing Basics
- CS 343 Switching, Intermediate Routing & W A N Technologies
- CS 414 UNIX Network Administration

### Programming Track
- CS 428 Object-Oriented Programming
- CS 431 Java Language Programming
- 3 hours advanced CS elective

### General Track
- CS 428 Object-Oriented Programming
- CS 431 Java Language Programming
- 3 hours advanced CS elective chosen with advisor approval

### Information Assurance and Security Track
- CS 351 Foundations of Information Security
- CS 352 Intro to Computer Law and Forensics
- CS 454 Intro to Network Security

### Required Support Courses: 15 hours
- ENG 341 Technical Writing
- Math 170 Business Math II (pre-requisite is Math 175 Business Math I or Math 141 College Algebra)
- BA 302 Business and Economic Statistics (can also be used in a General Business minor)
- or any statistics course
- MIS 326 Information Systems Technology Productivity (can also be used in a General Business minor)
- MIS 328 Project Management and Practice (can also be used in a General Business minor)

Note: Support courses may also be used to satisfy minor or second major requirements.

### Minor: minimum of 18 hours in another department
Recommended minor(s): General Business, Accounting, or other area of business

#### General Business Minor
- CS 251 Principles of Acct
- CS 231 Macro Economics
- 4 advanced courses from Acct / Eco / Fin / BA / MIS / Mkt / Mgt (the Business Administration dept recommends)
- Mgt 305 Management & Org Behavior
- Mkt 306 Marketing
- BA 301 Legal Environment of Business
- BA 302 Bus & Eco Statistics

#### Accounting Minor
- CS 221 Principles of Acct
- CS 222 Principles of Acct
- CS 321 Financial Acct I
- CS 322 Financial Acct II
- CS 311 or 326 or 437 or 440
- Eco 231 Macro Economics

See the other side for University Studies requirements

Last modified Feb 2008
### University Studies courses  
(from pp. 43-45 of the 2007-08 general catalog):

<table>
<thead>
<tr>
<th>Basic Skills</th>
<th>Eng 101, 102</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Math 175, 141, or 179</td>
</tr>
<tr>
<td></td>
<td>Spc 245 or 111 or 348 (245 is recommended)</td>
</tr>
<tr>
<td>American History</td>
<td>Hist 121, 122</td>
</tr>
<tr>
<td>Political Science</td>
<td>PSci 220, 221</td>
</tr>
<tr>
<td>Sciences:</td>
<td>any two courses from the Natural Sciences list</td>
</tr>
<tr>
<td>Visual &amp; Performing Arts:</td>
<td>any course from the Visual &amp; Performing Arts list</td>
</tr>
<tr>
<td>Humanities:</td>
<td>any course from the Humanities list</td>
</tr>
<tr>
<td>Social/Behavioral Sciences:</td>
<td>any course from the Social and Behavioral Sciences list</td>
</tr>
<tr>
<td>PE:</td>
<td>any two from the FRA activity list, or Marching Band, or one 2-hour wellness course, or at least one year of active-duty military service</td>
</tr>
</tbody>
</table>

**Total hours required: 120**

### Second Major in Computer Science (78-81 hours):
(for majors in departments other than Computer Science and Information Systems)

Requirements for the second major are the same as those for the first major, including required support courses (see the Computer Science program handout).

### Second Major in Computer Information Systems (27 hours)
(for majors in departments other than Computer Science and Information Systems)

*(or Second Bachelor’s Degree in Computer Information Systems)*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Language(s) taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSci 151</td>
<td>Programming Fundamentals I</td>
<td>C++</td>
</tr>
<tr>
<td>CSci 152</td>
<td>Programming Fundamentals II</td>
<td>C++</td>
</tr>
<tr>
<td>CSci 241</td>
<td>Machine Language, Organization and Architecture</td>
<td>Intel 80x86 assembly</td>
</tr>
<tr>
<td>CSci 251</td>
<td>Intro to Information Security, Law, and Ethics</td>
<td></td>
</tr>
<tr>
<td>CSci 270</td>
<td>Data Structures</td>
<td>C++</td>
</tr>
<tr>
<td>CSci 321</td>
<td>Survey of Languages</td>
<td>Ada, COBOL</td>
</tr>
<tr>
<td>or 428</td>
<td>Object-Oriented Programming</td>
<td>C++</td>
</tr>
<tr>
<td>or 431</td>
<td>Java Programming</td>
<td>Java</td>
</tr>
<tr>
<td>CSci 340</td>
<td>Intro to Database</td>
<td>Java, SQL</td>
</tr>
</tbody>
</table>

**Recommended Support Courses:** 18 hours

- Eng 341 Technical Writing
- Math 175 Business Math I or Math 141 College Algebra *(either also satisfies the U.S. Math requirement)*
- Math 176 Business Math II
- BA 302 Business and Economic Statistics
- MIS 326 Information Systems Technology Productivity
- MIS 328 Project Management and Practice

### Minor in Computer Science (18 hours):
(for majors in departments other than Computer Science and Information Systems)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Language(s) taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSci 151</td>
<td>Programming Fundamentals I</td>
<td>C++</td>
</tr>
<tr>
<td>CSci 152</td>
<td>Programming Fundamentals II</td>
<td>C++</td>
</tr>
<tr>
<td>CSci 270</td>
<td>Data Structures</td>
<td>C++</td>
</tr>
</tbody>
</table>

**plus 9 hours from:**

- CSci 241 Machine Language, Organization and Architecture  
  - Intel 80x86 assembly
## Bachelor of Science in Computer Science

### Required Major Courses: 42-44 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Language(s) taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSci 152</td>
<td>Programming Fundamentals II (prereq is 151)</td>
<td>C++</td>
</tr>
<tr>
<td>CSci 241</td>
<td>Machine Language &amp; Computer Organization</td>
<td>Intel 80x86 assembly</td>
</tr>
<tr>
<td>CSci 251</td>
<td>Intro to Information Security, Law, and Ethics</td>
<td>C++</td>
</tr>
<tr>
<td>CSci 270</td>
<td>Data Structures</td>
<td>Java, SQL</td>
</tr>
<tr>
<td>CSci 340</td>
<td>Intro to Database</td>
<td></td>
</tr>
<tr>
<td>CSci 343</td>
<td>Intro to Local Area Networks</td>
<td></td>
</tr>
<tr>
<td>CSci 359</td>
<td>Systems Analysis and Design</td>
<td></td>
</tr>
<tr>
<td>CSci 380</td>
<td>Web Programming and Interface Design</td>
<td></td>
</tr>
<tr>
<td>CSci 428</td>
<td>Object-Oriented Programming</td>
<td>C++</td>
</tr>
<tr>
<td>CSci 430</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CSci 440</td>
<td>Applied Software Project Development</td>
<td></td>
</tr>
</tbody>
</table>

Plus 3 technical electives in any one of these specialized areas:

(Choose Database Management, Networking, Programming, Information Assurance & Security, or General)

### Database Management Track
- CSci 470 Database Programming
- CSci 471 Database Administration
- CSci 414 UNIX Network Administration

### Networking Track
- CSci 342' Routers & Routing Basics
- CSci 343' Switching, Intermediate Routing & WAN Technologies
- CSci 414 UNIX Network Administration

### Programming Track
- CSci 321 Survey of Languages
- CSci 451 Java Language Programming
- CSci advanced elective

### General Track
- CSci 431 Java Language Programming
- 6 hours advanced CSci chosen with advisor approval

### Information Assurance and Security Track
- CSci 351 Foundations of Information Security
- CSci 352 Intro to Computer Law and Forensics
- CSci 454 Intro to Network Security

### Required Support Courses: 38-37 hours

- Eng 341 Technical Writing
- Phys 332 Digital Logic & Circuits or 432 Advanced Electronics or 492 Instrumentation & Control
- Math 101 Calculus I (may require pre-requisites of Math 141 Algebra and/or Math 142 Pre-Calculus)
- Math 192 Calculus II
- Math 331 Discrete Math
- Math 401 Intro to Mathematical Statistics
- 3 hours of advanced Math (excluding 301, 350, 351, 361, 362, 372, 360, 460)
- A two-course sequence (8 sh) in lab sciences for science majors:
  - Phys 211 & 212 or Chem 111 & 112 or ENVS 104 & 204 or ESS 101 & 203 or BSci 101 & 102
  - any of these courses will also satisfy your University Studies science requirement

** Note:** Support courses may also be used to satisfy minor or second major requirements.

### Minor: This degree program requires a minor or second major (minimum of 18 hours) from another department. The support courses already include a minor in Mathematics; no additional minor is required. The Math minor may be upgraded to a second major or an additional minor may be selected (recommended: Physics or other area of Science).

### Math Minor (already included in Support Courses)

- Math 101 Calculus I
- Math 192 Calculus II
- Math 331 Discrete Math
- Math 401 Math Statistics

**Note:** A Math minor can be upgraded to a second major by taking an additional 8 hours of Math courses (a Math second major must include 314 Calculus III).

### Physics Minor

- Phys 132 Basic Electronics
- Phys 211 Mechanics & Heat
- Phys 212 Magnetism & Electricity
- Three courses from 319, 321, 333, 397, 432, 492

See the other side for University Studies requirements
**University Studies courses** (from pp. 43-45 of the 2007-08 general catalog):

<table>
<thead>
<tr>
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<th>Requirement</th>
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<td>Phys 211, 212 (or alternates – see Required Support Courses)</td>
</tr>
<tr>
<td>Visual &amp; Performing Arts:</td>
<td>any course from the Visual &amp; Performing Arts list</td>
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</tr>
<tr>
<td>CSci 162 Programming Fundamentals II</td>
<td>C++</td>
</tr>
<tr>
<td>CSci 241 Machine Language, Organization and Architecture</td>
<td>Intel 80x86 assembly</td>
</tr>
<tr>
<td>CSci 251 Intro to Information Security, Law, and Ethics</td>
<td></td>
</tr>
<tr>
<td>CSci 270 Data Structures</td>
<td>C++</td>
</tr>
<tr>
<td>CSci 321 Survey of Languages</td>
<td>Ada, COBOL</td>
</tr>
<tr>
<td>or 429 Object-Oriented Programming</td>
<td>C++</td>
</tr>
<tr>
<td>or 431 Java Programming</td>
<td>Java</td>
</tr>
<tr>
<td>CSci 340 Intro to Database</td>
<td>Java, SQL</td>
</tr>
<tr>
<td>plus 6 sh advanced Computer Science</td>
<td></td>
</tr>
</tbody>
</table>

**Recommended Support Courses:** 18 hours

- Eng 341 Technical Writing
- Math 175 Business Math I or Math 141 College Algebra (either also satisfies the U.S. Math requirement)
- Math 176 Business Math II
- BA 302 Business and Economic Statistics
- MIS 326 Information Systems Technology Productivity
- MIS 328 Project Management and Practice

**Minor in Computer Science (18 hours):**
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</thead>
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<td>C++</td>
</tr>
<tr>
<td>CSci 162 Programming Fundamentals II</td>
<td>C++</td>
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<tr>
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</tr>
<tr>
<td>or advanced Computer Science</td>
<td></td>
</tr>
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</table>
# THECB Degree Inventory for Computer Science Department (5 January 2013)

<table>
<thead>
<tr>
<th>Department of Computer Science</th>
<th>CIP Codes</th>
<th>B.S. (120 SCH)</th>
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<tbody>
<tr>
<td>COMPUTER SCIENCE</td>
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<tr>
<td>COMPUTER INFORMATION SYSTEMS</td>
<td>11.0401.00</td>
<td>Start date: 09/01/1972</td>
</tr>
</tbody>
</table>

## 6.1.2 Enrollment Trends and Analysis

### Computer Information Systems (11040100)

<table>
<thead>
<tr>
<th>ETHNICITY</th>
<th>Undergraduate</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fall 2007</td>
<td>Fall 2008</td>
</tr>
<tr>
<td>Total SCH</td>
<td>479</td>
<td>521</td>
</tr>
<tr>
<td>Native American or Alaskan Native</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Black, Non-Hispanic</td>
<td>5</td>
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<thead>
<tr>
<th>GENDER</th>
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<tbody>
<tr>
<td>Female</td>
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<td>7</td>
</tr>
<tr>
<td>Male</td>
<td>36</td>
<td>34</td>
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| MEAN AGE                         | 24            | 23      | 24       | 25       | 26        | 24        | 23        | 24        | 25        | 26        |

| DEPARTMENT TOTAL                 | 41            | 41      | 38       | 46       | 43        | 41        | 38        | 46        | 43        |           |

### Computer Science (11010100)

<table>
<thead>
<tr>
<th>ETHNICITY</th>
<th>Undergraduate</th>
<th>Graduated</th>
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<td>Fall 2007</td>
<td>Fall 2008</td>
<td>Fall 2009</td>
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<tr>
<td>Total SCH</td>
<td>1,124</td>
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<td>989</td>
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<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
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<tr>
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</table>
The number of undergraduate majors in computer information systems had fluctuated between 38 and 46 during the 2007-2011, whereas that of undergraduate majors in computer science was between 65 and 117. The data shows that the CIS majors remain constant while CS majors had increased significantly in a steady pace from 2009 to 2011. The goal of the department is to reach above 150 in the next three and five years. To achieve this goal the department has devised plans to recruit students from the neighboring schools and community colleges. We have participated campus-wide activities, such as MANE EVENT that is being held twice in each year. Undergraduate advisors are actively working as a group to recruit more students. The department has taken a lead role in getting an NSF grant to take attention of undergraduate students during the course of their career. This initiative is expected to increase the number of the undergraduate students in the department. Additionally, the department is very successful in recruiting of international students whose number has increased in last six years. Toward achieving this goal, the department has been eagerly working to create new MOUs between international institutions.

### 6.1.3 Changes to the program and evaluation of the field.

To begin with, it is important to note that the basic mission and the effort of the Department to meet its mission goals have not changed over the last 6 years. The Department remains under staffed as evidenced by a very large student/faculty ratio. There are a number of very large graduate classes in which the enrollment exceeds 50 graduate students. Despite this, the faculty has remained dedicated and hard-working. Our graduates are in demand by industry as evidenced by the fact that they tend to obtain excellent and high-paying jobs after graduation. However, there have been two major changes within the Department within the last 6 years: (1) The character and professional training of the faculty has changed; (2) the practice and emphasis of student based assessment has gained in importance.

1. **The character and professional training of the faculty:**
   As the department began to dramatically grow in the 1990's, it became increasingly difficult to fill faculty positions with those having doctorates in Computer Science. As a result, a number of faculty members were hired with Master's degree in Computer Science. These were highly qualified teachers and served the students well. In the late 1990's, the Southern Association of Colleges and Schools (SACS), disqualified teachers with only a Master's degree from teaching graduate courses. It has taken a number of years to make this transition to an all Ph.D. faculty. However, at this time, all non-tenured faculty members, without a Computer Science doctorate, have been replaced with those holding a doctorate in Computer Science or related discipline. The exception is three tenured faculty members, who were all tenured over 30 years ago. Two of them hold only a Master's degree and one of them holds a Ph.D in Psychology. The department currently has ten faculty members with a doctorate degree including the one with a Ph.D in Psychology. A major change in the past six years is the character and qualification of the faculty. The department has never had as many Computer Science doctorates as it does at this time, and this number is expected to increase in the next few years as we expect the enrollment to go up.
(2) The practice and emphasis of student-based assessment:
In the last six years, the department has developed three program assessment plans, one for each degree program. The program assessment is based on individual departmental course assessments. Such assessments are quantitative, and attempts to measure relative success or failure. We currently have over 5 years of data for comparison, and this gives the faculty a valuable tool for identifying potential problem areas. The faculty has always suspected certain problem areas within the curriculum. Now, with the current assessment plan, we can quantify and verify that these problems do exist. Furthermore, this gives a measuring tool by which we can gage improvement. The assessment report is generated each semester and issued to the faculty for discussion. The Department Assessment Plan was outlined in detail in this document in Section 6.1.

6.2 Department Planning and Structure

6.2.1 Goals and Priorities of the Department

Goals:
1. To be consistent with the Mission of the Department and maintain and administer two undergraduate academic programs and one graduate academic program in computer science and information systems.
2. To educate qualified computer science teachers for service in the public schools and institutions of higher education. Our efforts have produced a number of teachers who work in the public school system and will continue.
3. To prepare students for advanced graduate studies.
4. To support the technological educational and training needs, both graduate and undergraduate, of local industry.
5. To provide basic computer science service courses for the University.
6. To attain ABET accreditation for computer science.

In summary, this Department attempts to create an environment in which students will develop their intellectual curiosity, analytical abilities, and computational and communication skills in preparation for independent and life-long learning. It is desired that this department become an important educational resource for Northeast Texas attracting students and research activities from industry and business. Furthermore, the Department will attempt to attain ABET accreditation for computer science during 2013-14 evaluation cycle. Its preparation is under way.

6.2.2 Strengths and Weaknesses of the Department

Strengths:
1. A compatible, diverse and knowledgeable faculty;
2. Critical mass of students;
3. Working relationships with complementary programs in math and sciences;
4. Common interests within the college for a PhD program;
5. Industry support for our endeavors.
Weaknesses:
1. Need for more professional and social interaction among faculty;
2. Low overall faculty interaction with the undergraduate student population;
3. Lack of diversity among the graduate student population;
4. ABET accreditation.

6.2.3 Faculty Expertise
Faculty expertise covers the breadth of the program. Faculty members are engaged and supported in scholarship of teaching through participation in regular faculty development workshops provided at the university and through peer mentoring. They are given department head evaluations of their teaching, research and scholarly activities, and service. They also receive peer evaluations, and student evaluations. These evaluations are discussed annually during the department head evaluation of faculty. Faculty members teaching large size classes were given graduate assistant support to help them in grading and classroom management. Many of the faculty members were assigned graduate research assistants to aid them in their research through internal research support by the graduate school and the college.

6.2.4 Faculty Qualifications
All teaching faculty in the computer science department are credentialed in-field and area of expertise either with a terminal degree in the field for graduate level courses or at least master’s degree with eighteen hours of graduate course work in computer science for all undergraduate level courses. There is sufficient breadth of faculty expertise to cover every course with a qualified instructor or professor. All faculty meet the SACS requirements.

6.2.5 Faculty Productivity 2012 (spring, summer, and fall) Academic Year

<table>
<thead>
<tr>
<th>FACULTY</th>
<th>SEMESTER CREDIT HOUR GENERATION</th>
<th>RESEARCH, CREATIVE &amp; SCHOLARLY ACTIVITIES</th>
<th>DEPARTMENTAL AND UNIVERSITY SERVICE</th>
<th>COMMUNITY SERVICE</th>
<th>OTHERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sang C. Suh</td>
<td>51</td>
<td>1 book, 1 journal paper, 5 conference papers published</td>
<td>CoSEA leadership counsel member, dept. graduate curriculum committee</td>
<td>FNTHAU member, SDPS president, SDPS2012 conference chair</td>
<td>Editor-in-Chief, Journal of Integrated Design and Process Science</td>
</tr>
<tr>
<td>Sam I. Saffer</td>
<td>48</td>
<td>1 conference paper published</td>
<td>CoSEA P&amp;T committee, Dept. assessment chair</td>
<td>None</td>
<td>None</td>
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<tr>
<td>R. Dan Creider</td>
<td>20</td>
<td>None</td>
<td>Faculty senate member, dept. graduate curriculum committee, graduate admission coordinator</td>
<td>Federation of North Texas Area Universities, Computer Science Committee</td>
<td>Information System Security Officer</td>
</tr>
<tr>
<td>Tom Brown</td>
<td>30</td>
<td>None</td>
<td>Dept. database administer, CS undergraduate academic advisor, undergraduate curriculum committee</td>
<td>Computerized record keeping for a community association</td>
<td>Enhancement of CSCI340 online version</td>
</tr>
<tr>
<td>Derek Harter</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Abdullah Arslan</td>
<td>26</td>
<td>1 conference paper published; 2 NSF grant proposal submitted</td>
<td>MS COMP Exam coordinator, CS graduate committee chair, scholarship committee chair, faculty senate member</td>
<td></td>
<td>Professional journal reviewer</td>
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<tr>
<td>Jinho Kim</td>
<td>9</td>
<td>1 journal paper published</td>
<td>Graduate curriculum committee, dept. scholarship committee</td>
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<td></td>
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<tr>
<td>Unal Sakoglu</td>
<td>38</td>
<td>1 journal paper, 2</td>
<td>Dept. library liaison, dept.</td>
<td></td>
<td>Manuscript reviewer</td>
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</tbody>
</table>
6.2.6 Quality of the Management and Communications in the Department
The department head organizes several faculty meetings each year to set the vision for the year and communicate initiatives. Further, faculty and staff meet to discuss program and administrative needs regarding supplies, equipment needs, travel, planned giving, and other internal procedures that are pertinent. Once a year, the department head hold annual conference with each faculty member during faculty annual evaluation period to discuss organizational effectiveness and communication. The department head and the administrative assistant address any effectiveness issues that are brought up at the meeting. There is a formal orientation and evaluation system in place for all graduate assistants. The information from the evaluation system for graduate assistants is used to assess quality in teaching and research by them. Additionally, each graduate assistant is assigned a faculty mentor that guides them through their experience as an assistant. The same for adjuncts and part-time faculty not has not formally been held, but will be held from spring 2013.

6.2.7 Student Advising and Mentoring
The College of Science, Engineering, and Agriculture (CoSEA) is committed to providing quality advising for students majoring in all programs in the college. Incoming freshmen and transfer students attend a Student Access and Success orientation session where they are assigned to a success coach who monitors their progress for their first year. At the orientation they also meet with an advisor from their major department. The advisor explains the choice of degree programs to the student and provides the student with a copy of the requirements for each program and information about prerequisites and course sequencing. Based on the student’s high school record or transfer courses, the advisor recommends a schedule of courses for the student’s first semester. The student is assigned to a specific advisor based on the last digit of their ID number and is asked to check with that advisor to plan for future semesters and to get advising for any academic matters. The Computer Science department is committed to quality advisement and involvement with student majors as evidenced by input from the interviews of advisees randomly selected.

6.2.8 Substantial Online Course Offerings/off-campus Programs
Not applicable to our programs.
6.3 Commitment to Student Learning
Computer Science Program
Mutlu Mete, Program Coordinator

6.3.1 Provide the learning goals and assessment program that is in place for students majoring in your program and your assessment program for collecting information regarding student learning.

After graduating from this program the students will develop skills which will make them able to:
to analyze problem analysis and find solutions of these problems applying the skill accumulated in the course of study various programming classes. Further the students will be able to model the solutions and find their optimal implementation. Through the course of study the students will learn the ethical rules and conditions, which will make them high level professionals. The students will create and develop excellent communication still, which will give them the opportunity to efficiently work in high competitive teams. From programming view point the students will be able to write software programs in the basic languages and to manipulate and operate with different database structures. On the theoretical side the students will learn the basic algorithms and how to analyze them for efficiency. Also, the students will gather knowledge about the basic theoretical concepts that lie behind the mother computer technologies.

The assessment of the above goals is conducted through the set of courses required by the program. Every course is using number of objectives which are in line with the main objectives of the program. Every objective is evaluated by particular assignments reported to the program coordinator at the end of every semester.

Other than grades, how do you document students are achieving these goals?
As stated above, each course in the program is assessed by a list of Course Objectives (SLO). Each instructor determines how to evaluate each objective. It may be the average of a test score, or by the successful completion of a particular on an exam, or on the base of every single problem in an exam, or on the base of a software coded or a class project developed. When the Instructor turns in the scores for the Course Objectives at the end of the semester, the determination of each Course Objective is also documented.

Does the program have a capstone or culminating experience?
The capstone courses in the program are CSCI 359 and CSCI 440.

How do you gather and use data collected in your assessments?
At the end of each semester every Instructor turns in an evaluation of the Course Objectives for the class he is teaching. Certain SLOs are in turn used to evaluate overall Program Objectives (GOALS). Each Academic Year, a report is generated and used as the basis of discussion by the faculty. Recommendations and possible changes are discussed at the faculty level. If the faculty members agree, changes are implemented for the next academic year.

6.3.2 Provide a summary analysis of the results of your assessment program.
The assessment data is used as a mechanism to give each faculty member an overview of the operation of each degree program. Each semester, an assessment report is generated for each of the CS, CIS, and MS programs. Without this semester assessment data, it would be difficult for each faculty member, who has his or hers own area of expertise and coursework, to be drawn into the involvement and
overall functioning of the program. Consider the percentiles as gauges on an instrument panel. Each
gauge may get a casual observance during the course of a given time period. However, the importance
comes from the fact that a gauge reading below normal will get the deserved attention when something
is malfunctioning.

The assessment data gives each degree program a topological structure, or hierarchical order, that
allows each faculty member to better envision how the program is functioning. The fact that each
course has a set of predetermined objectives, gives consistency to the course as Instructors changes
over the semesters. Consistency is a particular problem when courses tend to be taught by adjuncts. The
hierarchical order comes from the fact that various course objectives are used to evaluate a program
objective. Thus the scoring of such Program Objective is dispersed over a number of courses and a
number of Instructors.

The figure below demonstrates the assessment results for the CS Degree Program between 2008 and
2012. As described, it is considered successful if an assessment result is 75% or greater. As can be seen
from the figure, the CS degree program has successfully achieved the seven Program Objectives over
time. Note that the red line in the figure indicates whether the Program Objectives are satisfied or not.
In Fall 2008, Program Objective #5 (PO #5) was not successful, but after that, the figure shows the
objective has achieved successfully. Please see APPENDIX B for details about the assessment results.

Give examples of changes that have been initiated due to these analyses over the past five years.
Include examples from the undergraduate and graduate programs in the department.

Undergraduate Program:
One of the most critical times for computer science students is at the very beginning when the students
are learning the skills of computer programming. About half of the students have a difficult time with
these beginning concepts. We have used assessment data of re-evaluate our beginning programming
courses (CSCI 151, 152). We have used different teaching methodologies (such as the use of graphical
programming) to make these courses more attractive to beginning students. We have noticed that if we
can successfully interest a student interested in the "art" of computer programming at the CSCI 151
level, then that student will be more likely to successfully complete a computer science major. We are using the assessment data as we examine different teaching techniques as well as the use of different programming languages.

Graduate Program
As the undergraduate program did, the graduate program has updated course objectives based on the assessment results. For example, based on several faculty meetings, course objectives for CSCI 532 (Algorithm Design) had been modified based on Fall 2009 assessment results. In addition to clarification of the objectives, another important motivation was to make sure that all CSCI 532 instructors include in their coverage common topics, so that MS Comprehensive Exam has a single set for CSCI 532 independent of instructors.

Some criteria may be hard to evaluate, but we also have developed techniques to measure program objectives effectively. For example, measuring the following Program Objective (PO #6) would not be straightforward to evaluate in practice:

Objective #6 (PO #6): Students will become successful professionals able to gain employment and/or to be accepted into a Computer Science Ph.D. program.

This objective was assessed by follow-up surveys and letters of feedback from students. More in detail, a graduate student survey was conducted in July 2012 to obtain feedback about the master's program from current and former students and to obtain information about current employment from those students. The students were asked to complete the survey through a notice posted on Facebook and through an email list maintained by the International Student Office for recently graduated students who were on OPT (Optional Practical Training). One hundred current/former graduate students responded to the survey and their graduation dates ranged from 2003 to 2013 (projected). The results from the survey included graduation date, employer, location of employment and job title/description. By compiling the collected results, the jobs that the students have obtained demonstrate that our graduates are successful professionals and are competitive in the marketplace.

6.3.3 For undergraduate programs, describe the program’s role in providing service programs to the core curriculum/general education program.

Department of Computer Science supports other majors in many ways. CSCI 126 Microcomputer Applications is the key support course taken by many students not only from our college also other colleges. Kinesiology and Sports Studies, Health, Pre-Health Information Management, and Agricultural Science are among those programs. CSCI 126 provides the student with knowledge about hardware, software and data management systems. The student is provided experience with an operating system environment, application software including productivity tools, and the use of the internet to communicate and search for information. Furthermore, CSCI 151, CSCI 152, CSCI 241, and CSCI 270 are among required support courses in Math, Physics, and Agricultural Science Departments. CSCI 151 introduces the fundamental concepts of structured programming to improve student vision in software systems. Basic computer organization, machine cycle, digital representation of data and instructions are instructed in CSCI 241. Also, minor and second major in CS and CIS are valuable support to those students who like to gain up-to-date qualifications sought in industry and academia.
How successful are these programs in supporting the University Studies’ goals?

Students in CSCI 126, 151, 152, 241, 270 or pursuing computers science or information systems minor successfully demonstrate professional growth and integration of knowledge throughout these courses as evidenced by their evaluations. By the end of the program, students have a good understanding of the professional requirements of such as data manipulation, computer systems and components, information technologies, and basic of software development steps. Note that especially CSCI 126 Microcomputer Applications introduces tremendously important computer literacy and business communication tools, that are useful for professional success in students’ career.

Please provide the information on which you base your analysis.

Student success in these courses is determined by the student evaluations completed by their instructors. Students in their final week of semester of the program typically average a 1.0 to 1.5 on their evaluations. (Evaluation scale is 1-5, with 5 being poor and 1 being excellent). As a second measure, each instructor assesses student learning outcomes for each course. Each outcome is measure on a percentage scale. Given a poor out outcome (< 75%), the instructor give a justification on this outcome how to increase student learning. Professional growth and success of the students is also determined by the alumina surveys which provide information on how the individual is performing in their job. These evaluations provide feedback for overall growth and success of the students beyond graduation.

6.4 Recommendations and Implementation Plan

Based on general body of this review, it is recommended that formative and summative evaluations of the program continue and that data be used to increase quality and standards of course offered and to improve instruction in Computer Science. Each semester departmental curriculum committee will meet at least once to review course offerings, updates, co- and pre-requisite courses, and recommendations heard from other faculty members. Trends in the ACM/IEEE undergraduate curriculum guidelines will be implemented while amending current curriculum. The department also continues to evaluate courses based on university-wide and departmental-side assessment tools. Objectives for each course will be scrutinized by related faculty members on a regular basis.

6.4.1 What are the recommendations of the program in response to this review?

Although courses in the current program meet the academic standards, higher standards in the form of more challenging assignments in courses are being developed. The Computer Science Department has also raised the admission standards to the department. The admission standards are expected to be raised incrementally as the department continues to grow in the number of students, faculty, and academic achievement.

The student population shows an increasing trend in Computer Science program in recent years. The department is currently planning to offer more intro and advance level courses in form of distance education. Based on ongoing agreement, some courses will be offered at Navarro College. Therefore, more faculty positions are expected to reduce class sizes and offer more and diverse courses in different mediums. An application for ABET accreditation is an ongoing process and expected to be submitted in
Spring 2013. In terms of facilities, the department has already enough PC machine; however, more support is expected to establish a Mac and/or mobile programming lab.

6.4.2 **What types of human, fiscal, and physical resources are needed to implement your enrollment projections and recommendations?**

It is necessary to collect the views of the CS program faculty members and recommendations by the college deans and other members of the review process, in order to create the final draft of implementation plan. Based on the draft, the final implementation plan will be compiled with discussion and consultation among the department chair, the dean of the college, and the provost. As a result, the final implementation plan will combine the CS program plans with goals to those of the college and university, and it can also be used to guide the activities of the CS program for the next few years.
6.3 Commitment to Student Learning

Computer Information System Program
Tom Brown, Program Coordinator

6.3 Commitment to Student Learning
The Computer Information Systems program has as its goal to prepare students consistent with the
stated mission of the Computer Science & Information Systems Department at Texas A&M
University-Commerce. In particular it has objectives to enable the student to develop the knowledge
and skills to function effectively in professional positions in the fields of computer information
systems and technology, to grow professionally to assume leadership positions, or to pursue research or
graduate studies in the field. Upon graduation a student should be able to explain and apply appropriate
information technologies and employ appropriate methodologies to help an individual or organization
achieve its goals and objectives; to manage information technology resources of an individual or
organization; to recognize and adapt to the changes information systems technology and assist in the
integration of new technologies and methodologies.

6.3.1 Provide the learning goals and assessment program that is in place for students majoring in
your program and your assessment program for collecting information regarding student
learning.
Student outcomes related to the integration of knowledge skills and behaviors are assessed each
semester. Upon completion of the the CIS program students will have developed:
1) skills in problem analysis;
2) problem-solving skills;
3) solution-modeling skill;
4) solution-implementation skills;
5) ethics and strong communication skills; and
6) learn common algorithms and how to analyze them for efficiency; and
7) understand the concepts used in modern computer technologies.

Other than grades, how do you document students are achieving these goals?
For each course taught there is a list of course objectives or student learning outcomes(SLO). Each
instructor determines how to evaluate each SLO. It may be the average of a test score, or by the
successful completion of a particular question on an exam, or by a class project. When the instructor
turns in the scores for the course at the end of the semester, the determination of each course SLO is
also documented.

Does the program have a capstone or culminating experience?
Yes. CSCI 440: Applied Software Development Project: a capstone course to provide the student with
experience with analysis, design, and implementation of a semester project as a member of a system
development team.

How do you gather and use data collected in your assessments?
Each instructor submits an evaluation of each course objective or SLO at the end of each semester.
Certain SLOs are in turn used to evaluate overall program objectives (GOALS). Each academic year, a
report is generated and used as the basis of curriculum discussion. Recommendations and possible
changes are discussed at the faculty level. If the faculty agree, changes are implemented for the next
academic year.

6.3.2 Provide a summary analysis of the results of your assessment program.
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2011 and the second percentile is Spring 2012.

Fall  Spring
80%  81% Program Objective #1 (PO1): Students will develop skills in problem analysis.
78%  82% Program Objective #2 (PO2): Students will develop problem-solving skills.
86%  83% Program Objective #3 (PO3): Students will develop solution-modeling skills.
82%  78% Program Objective #4 (PO4): Students will develop solution-implementation skills.
91%  85% Program Objective #5 (PO5): Students will develop ethics and strong communication skills.

82%  82% Program Objective #6 (PO6): Learn common algorithms and how to analyze them for efficiency.
81%  89% Program Objective #7 (PO7): Understand the concepts used in modern computer technologies.

[Appendix contains a detailed analysis of assessment results].

Give examples of changes that have been initiated due to these analyses over the past five years. Changes that have been initiated due to the above mentioned analyses over the past five years are as follows:

- Additional faculty members have been hired so the majority of undergraduate courses are taught by experienced, full-time faculty;
- A computing laboratory staffed with student tutors has been created for undergraduate students;
- A majority of the upper-level courses are offered in hybrid or online form;
- The introductory course has been broadened to provide background in the various subdisciplines and applications of computer science and information systems;

6.3.3 For undergraduate programs, describe the program’s role in providing service programs to the core curriculum/general education program.
The Computer Information Systems undergraduate program does not have courses required by the general education curriculum. An introduction to computer science is offered as a service course to students from the College of Science, Engineering and Agriculture.

6.4 Recommendations and Implementation Plan
It is recommended that formative and summative evaluations of the program continue to be conducted each term, and that an annual analysis of data continue to be used to as a basis of discussion to improve the curriculum and instruction.

6.4.1 What are the recommendations of the program in response to this review? Courses in the current Computer Information Systems program currently meet the academic standards of the university and college. Faculty are evaluated on their ability to maintain rigorous requirements and to enhance the program to match the rapid change in the technologies and methodologies to be applied in this discipline.

6.4.2 What types of human, fiscal, and physical resources are needed to implement your enrollment projections and recommendations? A 2011-12 study recommended the doubling of resources allocated to the Computer Science & Information Systems Department. Given fluctuating enrollments in the graduate program along with hiring, budgetary, and physical plant constraints, the implementation of this recommendation may need to be implemented over the intermediate or long term.
APPENDIX A

Assessment for the CS Degree Program
FY 2011-2012
Fall 11 - Spring 12
Computer Science Dept.
Texas A&M University - Commerce

85% 81% Program Objective #1 (PO1): Students will develop skills in problem analysis.
81% 82% Program Objective #2 (PO2): Students will develop problem-solving skills.
86% 83% Program Objective #3 (PO3): Students will develop solution-modeling skills.
85% 82% Program Objective #4 (PO4): Students will develop solution-implementation skills.
94% 85% Program Objective #5 (PO5): Students will develop strong communication skills.
81% 82% Program Objective #6 (PO6): Learn common algorithms and how to analyze them for efficiency.
92% 88% Program Objective #7 (PO7): Understand the concepts used in modern computer technologies.

Outcome Description
85% 81% Program Objective #1 (PO1): Students will develop skills in problem analysis.

Assessment Method
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2011 and the second percentile is Spring 2012.

CSCI 270 Data Structures
77% 77% (CO270.2) Be able to use the linked list data structure.
81% 80% (CO270.3) Be able to use the stack data structure.
80% 79% (CO270.4) Be able to use the queue data structure.
79% 90% (CO270.8) Be able to use the binary tree data structure and a hash table.

CSCI 340 Introduction to Database Systems
80% 80%(CO340.6) Describe, define and apply the major components of the relational database model.
70 % n/a (CO340.8) Describe the fundamental data structures, access methods and storage devices needed for physical database design.

CSCI 359 Systems Analysis and Design
90% 82%(CO359.2) Explain the purpose and activities of the systems development life cycle phases.

CSCI 380 Web Programming and Interface Design
0% 88% (CO380.1) Creation and manipulation of web graphics using popular software tools.
0% 95% (CO380.2) Creation of Web Pages using XHTML
0% 94% (CO380.3) Application of cascading style sheets
CSCI 428 Object Oriented Programming
94% 83% (CO428.1) Software Engineering Basic.
96% 87% (CO428.6) UML

CSCI 431 JAVA Programming
92% n/a (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 Applied Software Project Development
100% 82% (CO440.6) Build user-friendly, aesthetic, and functional interfaces for application software projects.
76% 84% (CO440.8) Develop and implement a system application project in an object-oriented programming language using traditional process model diagrams as a guide.

CSCI 470 Database Programming
0% 90% (CO470.1) Identify and explain the major components of the relational data model.
0% 92% (CO470.2) Utilize structured query language (SQL) to define and manipulate database objects in the interactive mode.
0% 88% (CO470.3) Incorporate procedural extensions to SQL for maintaining database tables.
0% 84% (CO470.4) Develop an application program to access databases with the Java programming language.
0% 90% (CO470.8) Perform system and database administration to implement software to support database application development.
0% 84% (CO470.9) Complete a project to implement database management software or related tools.

81% 82% Program Objective #2 (PO2): Students will develop problem-solving skills.
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 152 Programming Fundamentals II
75% 76% (CO152.1) Be able to use one-dimensional arrays.
83% 75% (CO152.2) Be able to use at least one (preferably at least two) sorting technique(s) to rearrange data in an array.
80% 76% (CO152.3) Be able to search an array using both linear and binary searching techniques.
80% 88% (CO152.7) Be able to design and code a program which includes a user-created class.

CSCI 241 Assembly Language and Computer Organization
82% 86% (CO241.2) Concepts of Machine Instructions, Assembly and linking, assembly language programming (Unconditional jumps, flags, subroutines, Stacks).

CSCI 270 Data Structure and Algorithms
78% 77% (CO270.1) Be able to use address variables.
79% 90% (CO270.8) Be able to integrate the use of container classes (user-created or STL) into a moderately complex program solution.

CSCI 431 JAVA Programming
71% n/a (CO431.7) Employ exception-handling programming techniques.
81% n/a (CO431.8) Utilize file input and output procedures for sequential and random access.
92% n/a (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 Applied Software Project Development
90% 82% (CO440.9) Connect a database and interface to software project.

CSCI 470 Database Programming
n/a 84% (CO470.4) Develop an application program to access databases with the Java programming language.

86% 83% Program Objective #3 (PO3): Students will develop solution-modeling skills.
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 340 Introduction to Database Systems
90% 84% (CO340.1) Model a single entity, define and access a single entity database.
86% 80% (CO340.2) Model a one-to-many (1:m) relationship between two entities, define a 1:m database, and process a 1:m database.
75% 74% (CO340.3) Model a m:m relationship between two entities, define and process a m:m database.
90% 75% (CO340.4) Create a well-formed, high fidelity data model.
75% 77% (CO340.5) Describe the process of normalization and distinguish between different normal forms.

CSCI 359 Systems Analysis and Design
93% 91% (CO359.5) Understand and model system entities and data stores.
92% 92% (CO359.6) Understand and model system processes, events, and data flows within a system.
96% 90% (CO359.7) Understand and model classes of data within a system.
86% 82% (CO359.8) Understand concepts relating to various models, tools, and techniques used in system analysis and design.

CSCI 440 Applied Software Project Development
90% 85% (CO440.2) Use Microsoft Visio to create, edit, and publish to a website traditional process model diagrams.
84% 84% (CO440.3) Use Microsoft Visio to create, edit, and publish to a website Entity-Relationship diagrams.
80% 85% (CO440.7) Create a database using an Entity-Relationship diagram.

85% 82% Program Objective #4 (PO4): Students will develop solution-implementation skills.
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 152 Programming Fundamentals II
76% 80% (CO152.4) Be able to use multiple-dimensional arrays.
77% 78% (CO152.5) Be able to use structs.
76% 77% (CO152.6) Be able to use classes.

CSCI 241 Machine Language and Computer Organization
82% 86% (CO241.2) Concepts of Machine Instructions, Assembly and linking, assembly language programming (Unconditional jumps, flags, subroutines, Stacks).
83% 79% (CO241.4) I/O devices; memory mapped I/O; Interrupts; Arrays, addressing modes and Floating Point Instructions.

CSCI 270 Data Structures
77% n/a (CO270.5) Be able to design, code, and use recursive functions.

CSCI 340 Introduction to Database Systems
75% 86% (CO340.7) Learn and apply the Structured Query Language (SQL) for database definition and manipulation.
85% 72% (CO340.9) Develop a procedural language application program to update a database table.

CSCI 359 Systems Analysis and Design
93% 95% (CO359.4) Identify and understand system inputs and outputs.

CSCI 380 Web Programming and Interface Design
0% 88% (CO380.1) Creation and manipulation of web graphics using popular software tools.
0% 95% (CO380.2) Creation of Web Pages using XHTML
0% 94% (CO380.3) Application of cascading style sheets
0% 89% (CO380.4) Client Side Scripting using JavaScript
0% 93% (CO380.5) Database creation and Web Integration using server side scripting.
0% 91% (CO380.6) Utilize Ajax and Web 2.0 technologies to create Rich Internet Applications

CSCI 431 JAVA Programming
100% n/a (CO431.1) Code, compile and run a Java program.
94% n/a (CO431.2) Master programming techniques for console input and output.
93% n/a (CO431.3) Apply logical constructs for branching and loops.
71% n/a (CO431.7) Employ exception-handling programming techniques.
81% n/a (CO431.8) Utilize file input and output procedures for sequential and random access.
92% n/a (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 Applied Software Project Development
100% 90% (CO440.1) Develop and maintain an informational and project repository web site for an application project.

CSCI 470 Database Programming
0% 92% (CO470.2) Utilize structured query language (SQL) to define and manipulate database objects in the interactive mode.
0% 90% (CO470.5) Design a database-supported Web site.
0% 81% (CO470.6) Develop a database-supported Web site utilizing HTML and JavaServer Pages.
0% n/a (CO470.7) Apply XML for Data Exchange.

89% 85% Program Objective #5 (PO5) : Students will develop ethics and strong communication skills.
Assessment will be measured through testing the following course objectives: The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 251 Introduction to Information Security, Law, and Ethics
89% 81% (CO251.1) Define ethics, morality, and moral system and recognize the distinction between ethical theory and professional ethics.
86% 81% (CO251.2) Summarize the basic concepts of relativism, utilitarianism, and deontological theories.
78% 81% (CO251.3) Use methods and tools of analysis to analyze an argument to identify premises and conclusion and illustrate the use of example, analogy, and counter-analogy in an ethical argument.
92% 81% (CO251.4) Identify the strengths and weaknesses of relevant professional codes as expressions of professionalism and guides to decision-making.
88% 82% (CO251.5) Summarize the legal bases for the right to privacy and freedom of expression in one’s own nation and how those concepts vary from country to country.
86% 82% (CO251.6) Identify the professional’s role in security and the tradeoffs involved.
88% n/a (CO251.7) Outline the technical basis of viruses and denial-of-service attacks and enumerate techniques to combat the same.
82% n/a (CO251.8) Distinguish among patent, copyright, and trade secret protection and explain how patent and copyright laws may vary internationally.
89% n/a (CO251.9) Explain the various U.S. legislation and regulations that impact technology and the disadvantages and advantages of free expression in cyberspace.
90% n/a (CO251.10) Explain why computing/network access is restricted in some countries.
88% n/a (CO251.11) Define a computer use policy with enforcement measures.

CSCI 359 Systems Analysis and Design
92% 90% (CO359.3) Understand project management techniques.

CSCI 440 Applied Software Project Development
90% 92% (CO440.4) Develop and use a team constitution.
96% 85% (CO440.5) Solve team conflicts in a project building environment.
90% 86% (CO440.10) Create system documentation including help files, diagrams, and programming code.
100% 89% (CO440.11) Present the final project to an audience consisting of faculty, peers, administrators, and business leaders.
96% 88% (CO440.12) Evaluate other team members based upon specific criteria. (Derived based on team member evaluations.)

81% 82% Program Objective #6 (PO6): Learn common algorithms and how to analyze them for efficiency.
Assessment will be measured through testing the following course objectives: The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 152 Programming Fundamentals II
80% 88% (CO152.7) Be able to design and code a program which includes a user-created class.

CSCI 270 Data Structures
75% 75% (CO270.6) Understand Big-O notation (for algorithm efficiency): what it means, how it is determined, and why it should be considered in effective programming.
88% n/a (CO270.7) Be able to use the binary tree data structure and a hash table.

92% 88% Program Objective #7 (PO7): Learn theory behind modern computer technologies.
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 241 Machine Language and Computer Organization
94% 96% (CO241.1) Understand various numbering systems and conversions.
90% 89% (CO241.3) Understand Computer Organization: registers, transfers, machine cycles.
83% 79% (CO241.4) Understand I/O devices, memory mapped I/O; Interrupts.

CSCI 428 Object Oriented Programming
94% 83% (CO428.1) Software Engineering Basic.
98% 86% (CO428.2) Classes basics/advanced
96% 87% (CO428.6) UML

CSCI 430 Operating Systems
0% 92% (CO430.1) Understand the concepts, structures, and mechanisms of operating systems.
0% 80% (CO430.2) Understand memory management, virtual memory, swapping, paging algorithms, segmentation, and clock paging policies.
0% 92% (CO430.3) Understand multiprogramming and multiuser capabilities, and how operating systems evolved.
0% 84% (CO430.4) Understand process management, process states and process and thread structures and concepts.
0% 95% (CO430.5) Understand concurrent processes and associated deadlock prevention, avoidance, detection, recovery methods, and the use of semaphores.
0% 88% (CO430.6) Learn specific design decisions and architectures used in modern operating systems.

CSCI 359 Systems Analysis and Design
88% 90% (CO359.1) Understand concepts relating to different types of information systems.

Assessment for the CS Degree Program
FY 2010-2011
Fall 10 - Spring 11
Computer Science Dept.
Texas A&M University - Commerce

82% 83% Program Objective #1 (PO1): Students will develop skills in problem analysis.
80% 82% Program Objective #2 (PO2): Students will develop problem-solving skills.
79% 85% Program Objective #3 (PO3): Students will develop solution-modeling skills.
82% 79% Program Objective #4 (PO4): Students will develop solution-implementation skills.
87% 86% Program Objective #5 (PO5): Students will develop strong communication skills.
78% 80% Program Objective #6 (PO6): Learn common algorithms and how to analyze them for efficiency.
Program Objective #7 (PO7): Understand the concepts used in modern computer technologies.

Outcome Description
Program Objective #1 (PO1): Students will develop skills in problem analysis.

Assessment Method
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 270
77% 77% (CO270.2) Be able to use the linked list data structure.
80% 80% (CO270.3) Be able to use the stack data structure.
79% 77% (CO270.4) Be able to use the queue data structure.
80% 86% (CO270.8) Be able to use the binary tree data structure and a hash table.

CSCI 340 Introduction to Database Systems
79% 79% (CO340.6) Describe, define and apply the major components of the relational database model.
76% 76% (CO340.8) Describe the fundamental data structures, access methods and storage devices needed for physical database design.

CSCI 359 Systems Analysis and Design <Data not available>
0% 0% (CO359.2) Explain the purpose and activities of the systems development life cycle phases.

CSCI 380
0% 0% (CO380.1) Creation and manipulation of web graphics using popular software tools.
0% 0% (CO380.2) Creation of Web Pages using XHTML
0% 0% (CO380.3) Application of cascading style sheets

CSCI 428 Object Oriented Programming
98% 100% (CO428.1) Software Engineering Basic.
85% 85% (CO428.6) UML

CSCI 431 JAVA Programming
0% 0% (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 Applied Software Project Development
0% 93% (CO440.6) Build user-friendly, aesthetic, and functional interfaces for application software projects.
0% 95% (CO440.8) Develop and implement a system application project in an object-oriented programming language using traditional process model diagrams as a guide.

CSCI 470 Database Programming
0% 80% (CO470.1) Identify and explain the major components of the relational data model.
0% 88% (CO470.2) Utilize structured query language (SQL) to define and manipulate database objects.
in the interactive mode.
0% 82% (CO470.3) Incorporate procedural extensions to SQL for maintaining database tables.
0% 82% (CO470.4) Develop an application program to access databases with the Java programming language.
0% 80% (CO470.8) Perform system and database administration to implement software to support database application development.
0% 75% (CO470.9) Complete a project to implement database management software or related tools.

80% 82% Program Objective #2 (PO2): Students will develop problem-solving skills.
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 152 Programming Fundamentals II
84% 76% (CO152.1) Be able to use one-dimensional arrays.
77% 80% (CO152.2) Be able to use at least one (preferably at least two) sorting technique(s) to rearrange data in an array.
76% 80% (CO152.3) Be able to search an array using both linear and binary searching techniques.
77% 79% (CO152.7) Be able to design and code a program which includes a user-created class.

CSCI 241 Assembly Language and Computer Organization
89% 84% (CO241.2) Concepts of Machine Instructions, Assembly and linking, assembly language programming (Unconditional jumps, flags, subroutines, Stacks)

CSCI 270 Data Structure and Algorithms
76% 76% (CO270.1) Be able to use address variables.
80% 86% (CO270.8) Be able to integrate the use of container classes (user-created or STL) into a moderately complex program solution.

CSCI 431 JAVA Programming
0% 0% (CO431.7) Employ exception-handling programming techniques.
0% 0% (CO431.8) Utilize file input and output procedures for sequential and random access.
0% 0% (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 Applied Software Project Development
0% 95% (CO440.9) Connect a database and interface to software project.

CSCI 470 Database Programming
0% 82% (CO470.4) Develop an application program to access databases with the Java programming language.

79% 85% Program Objective #3 (PO3): Students will develop solution-modeling skills.
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 340 Introduction to Database Systems
94% 92% (CO340.1) Model a single entity, define and access a single entity database.
83% 79% (CO340.2) Model a one-to-many (1:m) relationship between two entities, define a 1:m database, and process a 1:m database.
70% 72% (CO340.3) Model a m:m relationship between two entities, define and process a m:m database.
75% 75% (CO340.4) Create a well-formed, high fidelity data model.
72% 77% (CO340.5) Describe the process of normalization and distinguish between different normal forms.

CSCI 359 Systems Analysis and Design <Data not available>

0% 0% (CO359.5) Understand and model system entities and data stores.

0% 0% (CO359.6) Understand and model system processes, events, and data flows within a system.

0% 0% (CO359.7) Understand and model classes of data within a system.

0% 0% (CO359.8) Understand concepts relating to various models, tools, and techniques used in system analysis and design.

CSCI 440 Applied Software Project Development
0% 95% (CO440.2) Use Microsoft Visio to create, edit, and publish to a web site traditional process model diagrams.
0% 97% (CO440.3) Use Microsoft Visio to create, edit, and publish to a web site Entity-Relationship diagrams.
0% 96% (CO440.7) Create a database using an Entity-Relationship diagram.

82% 73% Program Objective #4 (PO4): Students will develop solution-implementation skills. Assessment will be measured through testing the following course objectives: The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 152 Programming Fundamentals II
81% 76% (CO152.4) Be able to use multiple-dimensional arrays.
83% 78% (CO152.5) Be able to use structs.
77% 77% (CO152.6) Be able to use classes.

CSCI 241 Machine Language and Computer Organization
89% 84% (CO241.2) Concepts of Machine Instructions, Assembly and linking, assembly language programming (Unconditional jumps, flags, subroutines, Stacks )
94% 85% (CO241.4) I/O devices; memory mapped I/O; Interrupts ; Arrays, addressing modes and Floating Point Instructions

CSCI 270
80% 77% (CO270.5) Be able to design, code, and use recursive functions.

CSCI 359 Systems Analysis and Design
0% 0% (CO359.4) Identify and understand system inputs and outputs.

CSCI 340 Introduction to Database Systems
80% 80% (CO340.7) Learn and apply the Structured Query Language (SQL) for database definition and manipulation.
72% 62% (CO340.9) Develop a procedural language application program to update a database table.
CSCI 380  Web Programming and Interface Design
0% 0% (CO380.1) Creation and manipulation of web graphics using popular software tools.
0% 0% (CO380.2) Creation of Web Pages using XHTML
0% 0% (CO380.3) Application of cascading style sheets
0% 0% (CO380.4) Client Side Scripting using JavaScript
0% 0% (CO380.5) Database creation and Web Integration using server side scripting.
0% 0% (CO380.6) Utilize Ajax and Web 2.0 technologies to create Rich Internet Applications

CSCI 431 JAVA Programming
0% 0% (CO431.1) Code, compile and run a Java program.
0% 0% (CO431.2) Master programming techniques for console input and output.
0% 0% (CO431.3) Apply logical constructs for branching and loops.
0% 0% (CO431.7) Employ exception-handling programming techniques.
0% 0% (CO431.8) Utilize file input and output procedures for sequential and random access.
0% 0% (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 Applied Software Project Development
0% 90% (CO440.1) Develop and maintain an informational and project repository web site for an application project.

CSCI 470 Database Programming
0% 88% (CO470.2)Utilize structured query language (SQL) to define and manipulate database objects in the interactive mode.
0% 80% (CO470.5)Design a database-supported Web site.
0% 75% (CO470.6)Develop a database-supported Web site utilizing HTML and JavaServer Pages.
0% 0% (CO470.7)Apply XML for Data Exchange.

87% 86% Program Objective #5 (PO5) : Students will develop ethics and strong communication skills.
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 251 Introduction to Information Security, Law, and Ethics
83% 85% (CO251.1) Define ethics, morality, and moral system and recognize the distinction between ethical theory and professional ethics.
82% 86% (CO251.2)Summarize the basic concepts of relativism, utilitarianism, and deontological theories.
84% 78% (CO251.3) Use methods and tools of analysis to analyze an argument to identify premises and conclusion and illustrate the use of example, analogy, and counter-analogy in an ethical argument.
91% 84% (CO251.4) Identify the strengths and weaknesses of relevant professional codes as expressions of professionalism and guides to decision-making.
84% 85% (CO251.5) Summarize the legal bases for the right to privacy and freedom of expression in one’s own nation and how those concepts vary from country to country.
92% 83% (CO251.6) Identify the professional’s role in security and the tradeoffs involved.
87% 83% (CO251.7) Outline the technical basis of viruses and denial-of-service attacks and enumerate techniques to combat the same.
80% 76% (CO251.8) Distinguish among patent, copyright, and trade secret protection and explain how patent and copyright laws may vary internationally.
89% 83% (CO251.9) Explain the various U.S. legislation and regulations that impact technology and the disadvantages and advantages of free expression in cyberspace.
92% 86% (CO251.10) Explain why computing/network access is restricted in some countries.
90% 87% (CO251.11) Define a computer use policy with enforcement measures.

CSCI 359 Systems Analysis and Design

0% 0% (CO359.3) Understand project management techniques.

CSCI 440 Applied Software Project Development
0% 95% (CO440.4) Develop and use a team constitution.
0% 86% (CO440.5) Solve team conflicts in a project building environment.
0% 95% (CO440.10) Create system documentation including help files, diagrams, and programming code.
0% 93% (CO440.11) Present the final project to an audience consisting of faculty, peers, administrators, and business leaders.
0% 89% (CO440.12) Evaluate other team members based upon specific criteria. (Derived based on team member evaluations.)

78% 80% Program Objective #6 (PO6) : Learn common algorithms and how to analyze them for efficiency.
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 152
77% 79% (CO152.7) Be able to design and code a program which includes a user-created class.

CSCI 270
75% 76% (CO270.6) Understand Big-O notation (for algorithm efficiency): what it means, how it is determined, and why it should be considered in effective programming.
81% 85% (CO270.7) Be able to use the binary tree data structure and a hash table.

88% 89% Program Objective #7 (PO7) : Learn theory behind modern computer technologies.
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 241
93% 89% (CO241.1) Understand various numbering systems and conversions.
76% 85% (CO241.3) Understand Computer Organization: registers, transfers, machine cycles.
94% 85% (CO241.4) Understand I/O devices, memory mapped I/O; Interrupts.

CSCI 428 Object Oriented Programming
98% 100% (CO428.1) Software Engineering Basic.
84% 88% (CO428.2) Classes basics/advanced
85% 85% (CO428.6) UML

CSCI 430 Operating Systems
0% 0% (CO430.1) Understand the concepts, structures, and mechanisms of operating systems.
0% 0% (CO430.2) Understand memory management, virtual memory, swapping, paging algorithms, segmentation, and clock paging policies.
0% 0% (CO430.3) Understand multiprogramming and multiuser capabilities, and how operating systems evolved.
0% 0% (CO430.4) Understand process management, process states and process and thread structures and concepts.
0% 0% (CO430.5) Understand concurrent processes and associated deadlock prevention, avoidance, detection, recovery methods, and the use of semaphores.
0% 0% (CO430.6) Learn specific design decisions and architectures used in modern operating systems.

CSCI 359 Systems Analysis and Design
0% 0% (CO359.1) Understand concepts relating to different types of information systems.

Assessment Plan for the CS Degree Program
FY 2009-2010
Fall 09  Sp 10
Computer Science Dept.
Texas A&M University - Commerce

85% 82% Program Objective #1 (PO1): Students will develop skills in problem analysis.
80% 78% Program Objective #2 (PO2): Students will develop problem-solving skills.
85% 82% Program Objective #3 (PO3): Students will develop solution-modeling skills.
82% 76% Program Objective #4 (PO4): Students will develop solution-implementation skills.
81% 93% Program Objective #5 (PO5): Students will develop strong communication skills.
78% 77% Program Objective #6 (PO6): Learn common algorithms and how to analyze them for efficiency.
86% 82% Program Objective #7 (PO7): Understand the concepts used in modern computer technologies.

Outcome Description
85% 82% Program Objective #1 (PO1): Students will develop skills in problem analysis.

Assessment Method
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 270
76% 77% (CO270.2) Be able to use the linked list data structure.
77% 78% (CO270.3) Be able to use the stack data structure.
77% 78% (CO270.4) Be able to use the queue data structure.
75% 82% (CO270.8) Be able to use the binary tree data structure and a hash table.

CSCI 340 Introduction to Database Systems
77% 77% (CO340.6) Describe, define and apply the major components of the relational database model.
82% 76% (CO340.8) Describe the fundamental data structures, access methods and storage devices needed for physical database design.

CSCI 359 Systems Analysis and Design
95% 86% (CO359.2) Explain the purpose and activities of the systems development life cycle phases.

CSCI 380
0% 0% (CO380.1) Creation and manipulation of web graphics using popular software tools.
0% 0% (CO380.2) Creation of Web Pages using XHTML
0% 0% (CO380.3) Application of cascading style sheets

CSCI 428 Object Oriented Programming
97% 98% (CO428.1) Software Engineering Basic.
85% 85% (CO428.6) UML

CSCI 431 JAVA Programming
87% 0% (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440
90% 0% (CO440.6) Build user-friendly, aesthetic, and functional interfaces for application software projects.
100% 0% (CO440.8) Develop and implement a system application project in an object-oriented programming language using traditional process model diagrams as a guide.

CSCI 470
0% 0% (CO470.1) Identify and explain the major components of the relational data model.
0% 0% (CO470.2) Utilize structured query language (SQL) to define and manipulate database objects in the interactive mode.
0% 0% (CO470.3) Incorporate procedural extensions to SQL for maintaining database tables.
0% 0% (CO470.4) Develop an application program to access databases with the Java programming language.
0% 0% (CO470.8) Perform system and database administration to implement software to support database application development.
0% 0% (CO470.9) Complete a project to implement database management software or related tools.

**80% 78% Program Objective #2 (PO2): Students will develop problem-solving skills.**
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 152 Programming Fundamentals II
75% 76% (CO152.1) Be able to use one-dimensional arrays.
76% 75% (CO152.2) Be able to use at least one (preferably at least two) sorting technique(s) to rearrange data in an array.
76% 76% (CO152.3) Be able to search an array using both linear and binary searching techniques.
81% 76% (CO152.7) Be able to design and code a program which includes a user-created class.

CSCI 241 Assembly Language and Computer Organization
84% 88% (CO241.2) Concepts of Machine Instructions, Assembly and linking, assembly language programming (Unconditional jumps, flags, subroutines, Stacks)

CSCI 270 Data Structure and Algorithms
76% 76% (CO270.1) Be able to use address variables.
75% 82% (CO270.8) Be able to integrate the use of container classes (user-created or STL) into a moderately complex program solution.

CSCI 431 JAVA Programming
72% 0% (CO431.7) Employ exception-handling programming techniques.
75% 0% (CO431.8) Utilize file input and output procedures for sequential and random access.
87% 0% (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 Applied Software Project Development
100% 0% (CO440.9) Connect a database and interface to software project.

CSCI 470 Database Programming
0% 0% (CO470.4) Develop an application program to access databases with the Java programming language.

85% 82% Program Objective #3 (PO3): Students will develop solution-modeling skills. Assessment will be measured through testing the following course objectives: The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 340 Introduction to Database Systems
87% 94% (CO340.1) Model a single entity, define and access a single entity database.
82% 83% (CO340.2) Model a one-to-many (1:m) relationship between two entities, define a 1:m database, and process a 1:m database.
70% 75% (CO340.3) Model a m:m relationship between two entities, define and process a m:m database.
80% 75% (CO340.4) Create a well-formed, high fidelity data model.
70% 77% (CO340.5) Describe the process of normalization and distinguish between different normal forms.

CSCI 359 Systems Analysis and Design
91% 86% (CO359.5) Understand and model system entities and data stores.
83% 79% (CO359.6) Understand and model system processes, events, and data flows within a system.
87% 87% (CO359.7) Understand and model classes of data within a system.
87% 82% (CO359.8) Understand concepts relating to various models, tools, and techniques used in system analysis and design.

CSCI 440 Applied Software Project Development
95% 0% (CO440.2) Use Microsoft Visio to create, edit, and publish to a website traditional process model diagrams.
100% 0% (CO440.3) Use Microsoft Visio to create, edit, and publish to a website Entity-Relationship diagrams.
90% 0% (CO440.7) Create a database using an Entity-Relationship diagram.

82% 76% Program Objective #4 (PO4): Students will develop solution-implementation skills. Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 152 Programming Fundamentals II
73% 76% (CO152.4) Be able to use multiple-dimensional arrays.
76% 75% (CO152.5) Be able to use structs.
74% 75% (CO152.6) Be able to use classes.

CSCI 241 Machine Language and Computer Organization
84% 88% (CO241.2) Concepts of Machine Instructions, Assembly and linking, assembly language programming (Unconditional jumps, flags, subroutines, Stacks)
91% 62% (CO241.4) I/O devices; memory mapped I/O; Interrupts; Arrays, addressing modes and Floating Point Instructions

CSCI 270
79% 77% (CO270.5) Be able to design, code, and use recursive functions.

CSCI 359 Systems Analysis and Design
84% 79% (CO359.4) Identify and understand system inputs and outputs.

CSCI 340 Introduction to Database Systems
85% 83% (CO340.7) Learn and apply the Structured Query Language (SQL) for database definition and manipulation.
70% 72% (CO340.9) Develop a procedural language application program to update a database table.

CSCI 380 Web Programming and Interface Design
0% 0% (CO380.1) Creation and manipulation of web graphics using popular software tools.
0% 0% (CO380.2) Creation of Web Pages using XHTML
0% 0% (CO380.3) Application of cascading style sheets
0% 0% (CO380.4) Client Side Scripting using JavaScript
0% 0% (CO380.5) Database creation and Web Integration using server side scripting.
0% 0% (CO380.6) Utilize Ajax and Web 2.0 technologies to create Rich Internet Applications

CSCI 431 JAVA Programming
100% 0% (CO431.1) Code, compile and run a Java program.
80% 0% (CO431.2) Master programming techniques for console input and output.
88% 0% (CO431.3) Apply logical constructs for branching and loops.
72% 0% (CO431.7) Employ exception-handling programming techniques.
75% 0% (CO431.8) Utilize file input and output procedures for sequential and random access.
87% 0% (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 Applied Software Project Development
100% 0% (CO440.1) Develop and maintain an informational and project repository web site for an application project.

CSCI 470 Database Programming
0% 0% (CO470.2) Utilize structured query language (SQL) to define and manipulate database objects in the interactive mode.
0% 0% (CO470.5) Design a database-supported Web site.
0% 0% (CO470.6) Develop a database-supported Web site utilizing HTML and JavaServer Pages.
81% 93% Program Objective #5 (PO5) : Students will develop ethics and strong communication skills.
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 251 Introduction to Information Security, Law, and Ethics
72% 0% (CO251.1) Define ethics, morality, and moral system and recognize the distinction between ethical theory and professional ethics.
65% 0% (CO251.2) Summarize the basic concepts of relativism, utilitarianism, and deontological theories.
68% 0% (CO251.3) Use methods and tools of analysis to analyze an argument to identify premises and conclusion and illustrate the use of example, analogy, and counter-analogy in an ethical argument.
73% 0% (CO251.4) Identify the strengths and weaknesses of relevant professional codes as expressions of professionalism and guides to decision-making.
85% 0% (CO251.5) Summarize the legal bases for the right to privacy and freedom of expression in one’s own nation and how those concepts vary from country to country.
79% 0% (CO251.6) Identify the professional’s role in security and the tradeoffs involved.
68% 0% (CO251.7) Outline the technical basis of viruses and denial-of-service attacks and enumerate techniques to combat the same.
65% 0% (CO251.8) Distinguish among patent, copyright, and trade secret protection and explain how patent and copyright laws may vary internationally.
71% 0% (CO251.9) Explain the various U.S. legislation and regulations that impact technology and the disadvantages and advantages of free expression in cyberspace.
78% 0% (CO251.10) Explain why computing/network access is restricted in some countries.
75% 0% (CO251.11) Define a computer use policy with enforcement measures.

CSCI 359 Systems Analysis and Design
96% 93% (CO359.3) Understand project management techniques.

CSCI 440 Applied Software Project Development
90% 0% (CO440.4) Develop and use a team constitution.
95% 0% (CO440.5) Solve team conflicts in a project building environment.
95% 0% (CO440.10) Create system documentation including help files, diagrams, and programming code.
100% 0% (CO440.11) Present the final project to an audience consisting of faculty, peers, administrators, and business leaders.
95% 0% (CO440.12) Evaluate other team members based upon specific criteria. (Derived based on team member evaluations.)

79% 77% Program Objective #6 (PO6) : Learn common algorithms and how to analyze them for efficiency.
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.
CSCI 152
81% 76% (CO152.7) Be able to design and code a program which includes a user-created class.

CSCI 270
73% 75% (CO270.6) Understand Big-O notation (for algorithm efficiency): what it means, how it is determined, and why it should be considered in effective programming.
82% 80% (CO270.7) Be able to use the binary tree data structure and a hash table.

86% 82% Program Objective #7 (PO7): Learn theory behind modern computer technologies.
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2009 and the second percentile is Spring 2010.

CSCI 241
93% 91% (CO241.1) Understand various numbering systems and conversions.
79% 64% (CO241.3) Understand Computer Organization: registers, transfers, machine cycles.
91% 62% (CO241.4) Understand I/O devices, memory mapped I/O; Interrupts.

CSCI 428 Object Oriented Programming
97% 98% (CO428.1) Software Engineering Basic.
85% 84% (CO428.2) Classes basics/advanced
85% 85% (CO428.6) UML

CSCI 430 Operating Systems
90% 0% (CO430.1) Understand the concepts, structures, and mechanisms of operating systems.
82% 0% (CO430.2) Understand memory management, virtual memory, swapping, paging algorithms, segmentation, and clock paging policies.
80% 0% (CO430.3) Understand multiprogramming and multiuser capabilities, and how operating systems evolved.
88% 0% (CO430.4) Understand process management, process states and process and thread structures and concepts.
82% 0% (CO430.5) Understand concurrent processes and associated deadlock prevention, avoidance, detection, recovery methods, and the use of semaphores.
76% 0% (CO430.6) Learn specific design decisions and architectures used in modern operating systems.

CSCI 359 Systems Analysis and Design
91% 90% (CO359.1) Understand concepts relating to different types of information systems.

2008-2009 Assessment for the Computer Science Degree Program
Fall 2008 - Spring 2009
Computer Science Dept.
Texas A&M University - Commerce

83% 85% Program Objective #1 (PO1): Students will develop skills in problem analysis.
80% 81% Program Objective #2 (PO2): Students will develop problem-solving skills.
79% 78% Program Objective #3 (PO3): Students will develop solution-modeling skills.
Program Objective #4 (PO4): Students will develop solution-implementation skills.
Program Objective #5 (PO5): Students will demonstrate knowledge and understanding of professional ethics and responsible behavior, and will develop strong communication skills.
Program Objective #6 (PO6): Learn common algorithms and how to analyze them for efficiency.
Program Objective #7 (PO7): Understand the concepts used in modern computer technologies.

Outcome Description
Program Objective #1 (PO1): Students will develop skills in problem analysis.

Assessment Method
Assessment will be measured through testing the following course objectives:

CSCI 270
77% 77% (CO270.2) Be able to use the linked list data structure.
81% 73% (CO270.3) Be able to use the stack data structure.
79% 70% (CO270.4) Be able to use the queue data structure.
84% 78% (CO270.8) Be able to use the binary tree data structure and a hash table.

CSCI 340 Introduction to Database Systems
89% 80% (CO340.6) Describe, define and apply the major components of the relational database model.
90% 86% (CO340.8) Describe the fundamental data structures, access methods and storage devices needed for physical database design.

CSCI 359 Systems Analysis and Design
76% 80% (CO359.2) Explain the purpose and activities of the systems development life cycle phases.

CSCI 380 <Taught in Spring Semester>
0% 96% (CO380.1) Creation and manipulation of web graphics using popular software tools.
0% 99% (CO380.2) Creation of Web Pages using XHTML
0% 99% (CO380.3) Application of cascading style sheets

CSCI 428 Object Oriented Programming
89% 90% (CO428.1) Software Engineering Basic.
85% 88% (CO428.6) UML

CSCI 431 JAVA Programming
80% 86% (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 <Taught in Spring Semester>
0% 90% (CO440.6) Build user-friendly, aesthetic, and functional interfaces for application software projects.
0% 87% (CO440.8) Develop and implement a system application project in an object-oriented programming language using traditional process model diagrams as a guide.

CSCI 470 <Not taught this semester>
(CO470.1) Identify and explain the major components of the relational data model.
(CO470.2) Utilize structured query language (SQL) to define and manipulate database objects in the interactive mode.
(CO470.3) Incorporate procedural extensions to SQL for maintaining database tables.
(CO470.4) Develop an application program to access databases with the Java programming language.
(CO470.8) Perform system and database administration to implement software to support database application development.
(CO470.9) Complete a project to implement database management software or related tools.

PO1 Average score = 83% 85%

80% 81% Program Objective #2 (PO2): Students will develop problem-solving skills.
Assessment will be measured through testing the following course objectives:

CSCI 152 Programming Fundamentals II
81% 81% (CO152.1) Be able to use one-dimensional arrays.
83% 82% (CO152.2) Be able to use at least one (preferably at least two) sorting technique(s) to rearrange data in an array.
85% 85% (CO152.3) Be able to search an array using both linear and binary searching techniques.
83% 81% (CO152.7) Be able to design and code a program which includes a user-created class.

CSCI 241 Assembly Language and Computer Organization
81% 91% (CO241.2) Concepts of Machine Instructions, Assembly and linking, assembly language programming (Unconditional jumps, flags, subroutines, Stacks)

CSCI 270 Data Structure and Algorithms
77% 77% (CO270.1) Be able to use address variables.
86% 78% (CO270.9) Be able to integrate the use of container classes (user-created or STL) into a moderately complex program solution.

CSCI 431 JAVA Programming
60% 72% (CO431.7) Employ exception-handling programming techniques.
80% 66% (CO431.8) Utilize file input and output procedures for sequential and random access.
80% 86% (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 Applied Software Project Development <Taught in Spring Semester>
0% 93% (CO440.9) Connect a database and interface to software project.

CSCI 470 Database Programming <Not taught this semester>
(CO470.4) Develop an application program to access databases with the Java programming language.

PO2 Average Score = 80% 81%

79% 78% Program Objective #3 (PO3): Students will develop solution-modeling skills.
Assessment will be measured through testing the following course objectives:
CSCI 340 Introduction to Database Systems
90% 81% (CO340.1) Model a single entity, define and access a single entity database.
75% 71% (CO340.2) Model a one-to-many (1:m) relationship between two entities, define a 1:m database, and process a 1:m database.
67% 61% (CO340.3) Model a m:m relationship between two entities, define and process a m:m database.
69% 60% (CO340.4) Create a well-formed, high fidelity data model.
71% 76% (CO340.5) Describe the process of normalization and distinguish between different normal forms.

CSCI 359 Systems Analysis and Design
82% 79% (CO359.5) Understand and model system entities and data stores.
90% 78% (CO359.6) Understand and model system processes, events, and data flows within a system.
79% 87% (CO359.7) Understand and model classes of data within a system.
88% 68% (CO359.8) Understand concepts relating to various models, tools, and techniques used in system analysis and design.

CSCI 440 Applied Software Project Development <Taught in Spring Semester>
0% 93% (CO440.2) Use Microsoft Visio to create, edit, and publish to a web site traditional process model diagrams.
0% 94% (CO440.3) Use Microsoft Visio to create, edit, and publish to a web site Entity-Relationship diagrams.
0% 91% (CO440.7) Create a database using an Entity-Relationship diagram.

PO3 Average Score = 79% 78%

79% 85% Program Objective #4 (PO4): Students will develop solution-implementation skills. Assessment will be measured through testing the following course objectives:

CSCI 152 Programming Fundamentals II
74% 76% (CO152.4) Be able to use multiple-dimensional arrays.
71% 75% (CO152.5) Be able to use structs.
72% 73% (CO152.6) Be able to use classes.

CSCI 241 Machine Language and Computer Organization
81% 91% (CO241.2) Concepts of Machine Instructions, Assembly and linking, assembly language programming (Unconditional jumps, flags, subroutines, Stacks).
75% 84% (CO241.4) I/O devices; memory mapped I/O; Interrupts ; Arrays, addressing modes and Floating Point Instructions.

CSCI 270
75% 73% (CO270.5) Be able to create and use templates.
80% 71% (CO270.6) Be able to design, code, and use recursive functions.

CSCI 340 Introduction to Database Systems
85% 88% (CO340.7) Learn and apply the Structured Query Language (SQL) for database definition and manipulation.
75% 68% (CO340.9) Develop a procedural language application program to update a database table.

CSCI 359 Systems Analysis and Design
98% 95% (CO359.4) Identify and understand system inputs and outputs.

CSCI 380 Web Programming and Interface Design <Taught in Spring Semester>
0% 96% (CO380.1) Creation and manipulation of web graphics using popular software tools.
0% 99% (CO380.2) Creation of Web Pages using XHTML.
0% 99% (CO380.3) Application of cascading style sheets.
0% 91% (CO380.4) Client Side Scripting using JavaScript.
0% 94% (CO380.5) Database creation and Web Integration using server side scripting.
0% 92% (CO380.6) Utilize Ajax and Web 2.0 technologies to create Rich Internet Applications.

CSCI 431 JAVA Programming
100% 100% (CO431.1) Code, compile and run a Java program.
80% 85% (CO431.2) Master programming techniques for console input and output.
80% 86% (CO431.3) Apply logical constructs for branching and loops.
60% 72% (CO431.7) Employ exception-handling programming techniques.
80% 66% (CO431.8) Utilize file input and output procedures for sequential and random access.
80% 86% (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 Applied Software Project Development <Taught in Spring Semester>
0% 95% (CO440.1) Develop and maintain an informational and project repository web site for an application project.

CSCI 470 Database Programming <Not taught this semester>
(CO470.2) Utilize Structured query language (SQL) to define and manipulate database objects in the interactive mode.
(CO470.5) Design a database-supported Web site.
(CO470.6) Develop a database-supported Web site utilizing HTML and JavaServer Pages.
(CO470.7) Apply XML for Data Exchange.

PO4 Average Score = 79% 85%

66% 84% Program Objective #5 (PO5): Students will demonstrate knowledge and understanding of professional ethics and responsible behavior, and will develop strong communication skills.

Assessment will be measured through testing the following course objectives:

CSCI 251 Introduction to Information Security, Law, and Ethics
61% 77% (CO251.1) Define ethics, morality, and moral system and recognize the distinction between ethical theory and professional ethics.
56% 70% (CO251.2) Summarize the basic concepts of relativism, utilitarianism, and deontological theories.
46% 71% (CO251.3) Use methods and tools of analysis to analyze an argument to identify premises.
and conclusion and illustrate the use of example, analogy, and counter-analogy in an ethical argument.

63% 87% (CO251.4) Identify the strengths and weaknesses of relevant professional codes as expressions of professionalism and guides to decision-making.

68% 84% (CO251.5) Summarize the legal bases for the right to privacy and freedom of expression in one’s own nation and how those concepts vary from country to country.

74% 83% (CO251.6) Identify the professional’s role in security and the tradeoffs involved.

76% 93% (CO251.7) Outline the technical basis of viruses and denial-of-service attacks and enumerate techniques to combat the same.

54% 79% (CO251.8) Distinguish among patent, copyright, and trade secret protection and explain how patent and copyright laws may vary internationally.

67% 79% (CO251.9) Explain the various U.S. legislation and regulations that impact technology and the disadvantages and advantages of free expression in cyberspace.

71% 96% (CO251.10) Explain why computing/network access is restricted in some countries.

75% 81% (CO251.11) Define a computer use policy with enforcement measures.

CSCI 359 Systems Analysis and Design

84% 86% (CO359.3) Understand project management techniques.

CSCI 440 Applied Software Project Development <Taught in Spring Semester>

0% 94% (CO440.4) Develop and use a team constitution.

0% 87% (CO440.5) Solve team conflicts in a project building environment.

0% 81% (CO440.10) Create system documentation including help files, diagrams, and programming code.

0% 91% (CO440.11) Present the final project to an audience consisting of faculty, peers, administrators, and business leaders.

0% 92% (CO440.12) Evaluate other team members based upon specific criteria. (Derived based on team member evaluations.)

PO5 Average Score = 66% 84%

82% 77% Program Objective #6 (PO6) : Learn common algorithms and how to analyze them for efficiency.

Assessment will be measured through testing the following course objectives:

CSCI 152

83% 81% (CO152.7) Be able to design and code a program which includes a user-created class.

CSCI 270

78% 71% (CO270.7) Understand Big-O notation (for algorithm efficiency): what it means, how it is determined, and why it should be considered in effective programming.

84% 79% (CO270.8) Be able to use the binary tree data structure and a hash table.

PO6 Average Score = 82% 77%

80% 88% Program Objective #7 (PO7) : Learn theory behind modern computer technologies.

Assessment will be measured through testing the following course objectives:
CSCI 241
88% 93% (CO241.1) Understand various numbering systems and conversions.
81% 84% (CO241.3) Understand Computer Organization: registers, transfers, machine cycles.
75% 84% (CO241.4) Understand I/O devices, memory mapped I/O; Interrupts.

CSCI 359 Systems Analysis and Design
91% 87% (CO359.1) Understand concepts relating to different types of information systems.

CSCI 428 Object Oriented Programming
89% 90% (CO428.1) Software Engineering Basic.
93% 89% (CO428.2) Classes basics/advanced
85% 88% (CO428.6) UML

CSCI 430 Operating Systems (Taught in Fall Semester)
72% 0% (CO430.1) Understand the concepts, structures, and mechanisms of operating systems.
80% 0% (CO430.2) Understand memory management, virtual memory, swapping, paging algorithms, segmentation, and clock paging policies.
80% 0% (CO430.3) Understand multiprogramming and multiuser capabilities, and how operating systems evolved.
65% 0% (CO430.4) Understand process management, process states and process and thread structures and concepts.
70% 0% (CO430.5) Understand concurrent processes and associated deadlock prevention, avoidance, detection, recovery methods, and the use of semaphores.
73% 0% (CO430.6) Learn specific design decisions and architectures used in modern operating systems.

PO6 Average Score = 80% 88%
APPENDIX B

Assessment for the CIS Degree Program
FY 2011-2012
Fall 11 - Spring 12
Computer Science Dept.
Texas A&M University - Commerce

Fall  Spring
80%  81% Program Objective #1 (PO1): Students will develop skills in problem analysis.
78%  82% Program Objective #2 (PO2): Students will develop problem-solving skills.
86%  83% Program Objective #3 (PO3): Students will develop solution-modeling skills.
82%  78% Program Objective #4 (PO4): Students will develop solution-implementation skills.
91%  85% Program Objective #5 (PO5): Students will develop ethics and strong communication skills.
82%  82% Program Objective #6 (PO6): Learn common algorithms and how to analyze them for efficiency.
81%  89% Program Objective #7 (PO7): Understand the concepts used in modern computer technologies.

Outcome Description
80%  81% Program Objective #1 (PO1): Students will develop skills in problem analysis.

Assessment Method
Assessment will be measured through testing the following course objectives:
The first percentile is Fall 2011 and the second percentile is Spring 2012.

CSCI 270 Data Structures
77%  77% (CO270.2) Be able to use the linked list data structure.
81%  80% (CO270.3) Be able to use the stack data structure.
80%  79% (CO270.4) Be able to use the queue data structure.
79%  90% (CO270.8) Be able to use the binary tree data structure and a hash table.

CSCI 233 Application Program Development
90% n/a (CO233.2) Design and develop a basic report program.
72% n/a (CO233.6) Design and develop a program to process a sequentially-organized file.
70% n/a (CO233.7) Develop a program to access data from a database.
76% n/a (CO233.8) Design and develop a basic input form to capture data for an application.
70% n/a (CO233.9) Design and develop pages for a basic online application (team project).

CSCI 340 Introduction to Database Systems
80% 80% (CO340.6) Describe, define and apply the major components of the relational database model.
70% n/a (CO340.8) Describe the fundamental data structures, access methods and storage devices needed for physical database design.

CSCI 359 Systems Analysis and Design
90% 82% (CO359.2) Explain the purpose and activities of the systems development life cycle phases.

CSCI 380 Web Programming and Interface Design
0% 88% (CO380.1) Creation and manipulation of web graphics using popular software tools.
0% 95% (CO380.2) Creation of Web Pages using XHTML
0% 94% (CO380.3) Application of cascading style sheets

CSCI 431 JAVA Programming
92% n/a (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 Applied Software Project Development
100% 82% (CO440.6) Build user-friendly, aesthetic, and functional interfaces for application software projects.
76% 84% (CO440.8) Develop and implement a system application project in an object-oriented programming language using traditional process model diagrams as a guide.

CSCI 470 Database Programming
0% 90% (CO470.1) Identify and explain the major components of the relational data model.
0% 92% (CO470.2) Utilize structured query language (SQL) to define and manipulate database objects in the interactive mode.
0% 88% (CO470.3) Incorporate procedural extensions to SQL for maintaining database tables.
0% 84% (CO470.4) Develop an application program to access databases with an application programming interface.
0% 90% (CO470.8) Perform system and database administration to implement software to support database application development.
0% 84% (CO470.9) Complete a project to implement database management software or related tools.

78% 82% Program Objective #2 (PO2): Students will develop problem-solving skills.
Assessment will be measured through testing the following course objectives:

CSCI 152 Programming Fundamentals II
75% 76% (CO152.1) Be able to use one-dimensional arrays.
83% 75% (CO152.2) Be able to use at least one (preferably at least two) sorting technique(s) to rearrange data in an array.
80% 76% (CO152.3) Be able to search an array using both linear and binary searching techniques.
80% 88% (CO152.7) Be able to design and code a program which includes a user-created class.

CSCI 233 Application Program Development
90% n/a (CO233.2) Design and develop a basic report program.
70% n/a (CO233.3) Enhance a basic report program to process grouped data and summarize results.
82% n/a (CO233.4) Learn the programming constructs and develop programs to create and process arrays.
70% n/a (CO233.5) Develop a program to capture, process and store object data in a file.
72% n/a (CO233.6) Design and develop a program to process a sequentially-organized file.
70% n/a (CO233.7) Develop a program to access data from a database.
76% n/a (CO233.8) Design and develop a basic input form to capture data for an application.
70% n/a (CO233.9) Design and develop pages for a basic online application (team project).

CSCI 241 Assembly Language and Computer Organization
82% 86% (CO241.2) Concepts of Machine Instructions, Assembly and linking, assembly language programming (Unconditional jumps, flags, subroutines, Stacks )

CSCI 270 Data Structure and Algorithms
78% 77% (CO270.1) Be able to use address variables.
79% 90% (CO270.8) Be able to integrate the use of container classes (user-created or STL) into a moderately complex program solution.

CSCI 431 JAVA Programming
71% n/a (CO431.7) Employ exception-handling programming techniques.
81% n/a (CO431.8) Utilize file input and output procedures for sequential and random access.
92% n/a (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 Applied Software Project Development
90% 82% (CO440.9) Connect a database and interface to software project.

CSCI 470 Database Programming
0% 84% (CO470.4) Develop applications to access databases with an application programming interface.

86% 83% Program Objective #3 (PO3): Students will develop solution-modeling skills.
Assessment will be measured through testing the following course objectives:

CSCI 340 Introduction to Database Systems
90% 84% (CO340.1) Model a single entity, define and access a single entity database.
86% 80% (CO340.2) Model a one-to-many (1:m) relationship between two entities, define a 1:m database, and process a 1:m database.
75% 74% (CO340.3) Model a m:m relationship between two entities, define and process a m:m database.
90% 75% (CO340.4) Create a well-formed, high fidelity data model.
75% 77% (CO340.5) Describe the process of normalization and distinguish between different normal forms.

**CSCI 359 Systems Analysis and Design**
93% 91% (CO359.5) Understand and model system entities and data stores
92% 92% (CO359.6) Understand and model system processes, events, and data flows within a system.
96% 90% (CO359.7) Understand and model classes of data within a system.
86% 82% (CO359.8) Understand concepts relating to various models, tools, and techniques used in system analysis and design.

**CSCI 440 Applied Software Project Development**
90% 85% (CO440.2) Use Microsoft Visio to create, edit, and publish to a web site traditional process model diagrams.
84% 84% (CO440.3) Use Microsoft Visio to create, edit, and publish to a web site Entity-Relationship diagrams.
80% 85% (CO440.7) Create a database using an Entity-Relationship diagram.

**82% 78% Program Objective #4 (PO4): Students will develop solution-implementation skills.**
Assessment will be measured through testing the following course objectives:

**CSCI 152 Programming Fundamentals II**
76% 80% (CO152.4) Be able to use multiple-dimensional arrays.
77% 78% (CO152.5) Be able to use structs.
76% 77% (CO152.6) Be able to use classes.

**CSCI 233 Application Program Development**
90% n/a (CO233.2) Design and develop a basic report program.
70% n/a (CO233.3) Enhance a basic report program to process grouped data and summarize results.
72% n/a (CO233.6) Design and develop a program to process a sequentially-organized file.
70% n/a (CO233.7) Develop a program to access data from a database.

**CSCI 241 Machine Language and Computer Organization**
82% 86% (CO241.2) Concepts of Machine Instructions, Assembly and linking, assembly language programming (Unconditional jumps, flags, subroutines, Stacks)
83% 79% (CO241.4) I/O devices; memory mapped I/O; Interrupts; Arrays, addressing modes and Floating Point Instructions

**CSCI 270**
77% n/a (CO270.5) Be able to design, code, and use recursive functions.
75% 75% (CO270.6) Be able to design, code, and use recursive functions.

**CSCI 359 Systems Analysis and Design**
93% 95% (CO359.4) Identify and understand system inputs and outputs.

**CSCI 340 Introduction to Database Systems**
75% 86% (CO340.7) Learn and apply the Structured Query Language (SQL) for database definition and manipulation.
85% 72% (CO340.9) Develop a procedural language application program to update a database table.

**CSCI 380 Web Programming and Interface Design**
0% 88% (CO380.1) Creation and manipulation of web graphics using popular software tools.
0% 95% (CO380.2) Creation of Web Pages using XHTML
0% 94% (CO380.3) Application of cascading style sheets
0% 89% (CO380.4) Client Side Scripting using JavaScript
0% 93% (CO380.5) Database creation and Web Integration using server side scripting.
0% 91% (CO380.6) Utilize Ajax and Web 2.0 technologies to create Rich Internet Applications

**CSCI 431 JAVA Programming**
100% n/a (CO431.1) Code, compile and run a Java program.
94% n/a (CO431.2) Master programming techniques for console input and output.
93% n/a (CO431.3) Apply logical constructs for branching and loops.
71% n/a (CO431.7) Employ exception-handling programming techniques.
81% n/a (CO431.8) Utilize file input and output procedures for sequential and random access.
92% n/a (CO431.9) Use the Swing library to develop programs with graphical user interfaces.

CSCI 440 Applied Software Project Development
100% 90% (CO440.1) Develop and maintain an informational and project repository web site for an application project.

CSCI 440 Applied Software Project Development
90% 92% (CO440.4) Develop and use a team constitution.
96% 85% (CO440.5) Solve team conflicts in a project building environment.
90% 86% (CO440.10) Create system documentation including help files, diagrams, and programming code.
100% 89% (CO440.11) Present the final project to an audience consisting of faculty, peers, administrators, and business leaders.
96% 88% (CO440.12) Evaluate other team members based upon specific criteria. (Derived based on team member evaluations.)

81% 82% Program Objective #6 (PO6) : Learn common algorithms and how to analyze them for efficiency.
Assessment will be measured through testing the following course objectives:

**CSCI 152**
80% 88% (CO152.7) Be able to design and code a program which includes a user-created class.

**CSCI 270**
75% 75% (CO270.6) Understand Big-O notation (for algorithm efficiency): what it means, how it is determined, and why it should be considered in effective programming.
88% n/a (CO270.7) Be able to use the binary tree data structure and a hash table.

**81% 89% Program Objective #7 (PO7) : Learn theory behind modern computer technologies.**
Assessment will be measured through testing the following course objectives:

**CSCI 241**
94% 96% (CO241.1) Understand various numbering systems and conversions.
90% 89% (CO241.3) Understand Computer Organization: registers, transfers, machine cycles.
83% 79% (CO241.4) Understand I/O devices, memory mapped I/O; Interrupts.

**CSCI 233 Application Program Development**
95% 0% (CO233.1) Compile and test a program.
90% 0% (CO233.2) Design and develop a basic report program.
70% 0% (CO233.3) Enhance a basic report program to process grouped data and summarize results.
82% 0% (CO233.4) Learn the programming constructs and develop programs to create and process arrays.
70% 0% (CO233.5) Develop a program to capture, process and store object data in a file.
72% 0% (CO233.6) Design and develop a program to process a sequentially-organized file.
70% 0% (CO233.7) Develop a program to access data from a database.
76% 0% (CO233.8) Design and develop a basic input form to capture data for an application.
70% 0% (CO233.9) Design and develop pages for a basic online application (team project).

**CSCI 359 Systems Analysis and Design**
88% 90% (CO359.1) Understand concepts relating to different types of information systems.
PROFESSIONAL APPOINTMENTS

• 1992-present: Assistant, Associate, and currently Professor & Head, Department of Computer Science & Information Systems, Texas A&M University-Commerce, U.S.A.
• 1990-1992: Research Associate, Grants from Texas Instruments Systems Lab., Dallas, TX, and Department of Computer Science & Engineering, Southern Methodist University, U.S.A.
• 1989-1990: Instructor, Department of Computer Science & Engineering, Southern Methodist University, U.S.A.

AREAS OF EXPERTISE

1) Data/Knowledge Mining
2) Data Analytics and Information Visualization
3) Cyber Physical Systems
4) Human Computer Interfaces and Interaction
5) Bio and Human Informatics

PROFESSIONAL PREPARATION

✓ Ph.D. Computer Science
   Southern Methodist University, U.S.A., 1992
✓ M.S. Computer Science
   University of Hawaii, U.S.A., 1986

EDITOR-in-Chief

AWARDS and FELLOSHIPS

- Excellence in Leadership Award, Society for Design & Process (2010)
- Texas A&M System Faculty Teaching Excellence Award by Students (2010, 2011)
- Outstanding Achievement Award, WorldComp2009 – World Congress on Computer Science, Computer Engineering and Applied Computing (2009)
- Nominated for Minnie Stevens Piper Professor Teaching Award by A&M-Commerce faculty senate (2009)
- Distinguished Service Award, Society for Design & Process Science (1996)
- Texas Instruments Research Fellowship Award (1990-92)
- Graduate Instructor Fellowship Award, Southern Methodist University (1989-90)
- University of Hawaii Software Engineering Research Fellowship Award (1985-86)

UNIVERSITY SERVICES

2010-2011 Chairman, Computational Science Ph.D task committee, TAMU-C
2008-present Department Head, Computer Science Department, TAMU-C
2011-present Member, Leadership Council, College of Science, Engineering and Agriculture, TAMU-C.
2008-2011 Member, College of Arts & Sciences Executive Council, TAMU-C.
2008-present Representative, Computer Science Session, Main Event Preview Day, TAMU-C
2008(Nov. 7) Judge, Computer Science Program, Pathway Research Symposium, TAMU.
2007(Apr. 5) Graduate Council Representative, Ph.D. dissertation: Relationship between acculturation and personality for Asian Indians in the United States.
2008-2011 Chairman, Graduate Curriculum Committee, Computer Science Department, TAMU-C
2005, 2012 Member, ABET accreditation planning and advisory committee, Computer Science, TAMU-C.
1993-2006 Graduate Curriculum Committee Member, Computer Science Department, TAMU-C
1998-present Computer Science Committee Member, Federation of North Texas Area Universities
2000-2005 Member, Faculty Development Committee, TAMU-C
2000-2005 Member, University Honors Committee, TAMU-C
2003 Member, University Graduate Research Committee, TAMU-C
2002-2005 Member, Science Council of College of Arts and Sciences, TAMU-C
2002-2006 Science and Technology Building Advisory Team Member, TAMU-C
2002 SACS (Southern Associations of Colleges and Schools) subcommittee member for Section 5A, TAMU-C
1998-2001 Faculty Senator, Computer Science Department, TAMU-C
1998-present Graduate Comprehensive Exam Coordinator, Computer Science Department, TAMU-C
1993-present Computer Science Department Library Liaison, TAMU-C

**REGIONAL/NATIONAL PROFESSIONAL SERVICES**

<table>
<thead>
<tr>
<th>Year</th>
<th>Position</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-2012</td>
<td>Vice President, Elected in June, 2010. Society for Design and Process Science. Established in 1995 at the IC² (Innovation, Creativity, and Capital) Institute, University of Texas at Austin. World organization with 1000+ professional membership, <a href="http://www.sdpsnet.org">www.sdpsnet.org</a></td>
<td></td>
</tr>
<tr>
<td>2009-2012</td>
<td>North Texas Federation Advisory Panel member. Elected as a 3-year term advisory panel member to serve the North Texas Federation for faculty research collaboration and student research enhancement (with University of North Texas and Texas Women’s University)</td>
<td></td>
</tr>
<tr>
<td>1998-Present</td>
<td>Member, Eastfield College Technology Advisory Board. Advisory body for Eastfield College’s technical curriculum and planning</td>
<td></td>
</tr>
<tr>
<td>1998-present</td>
<td>Computer Science Committee Member, Federation of North Texas Area Universities</td>
<td></td>
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<tr>
<td>2003-present</td>
<td>Treasurer, Computer Science Committee, Federation of North Texas Area Universities</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>Reviewer, Best Paper Award in Computer Science (Data Analysis and Data Mining), Southern Association of Colleges and Schools</td>
<td></td>
</tr>
</tbody>
</table>

**CONFERENCE SYNERGISTIC ACTIVITIES**

**CONFERENCE KEYNOTE SPEECH**

**S. C. Suh**, Conference Main **Keynote Speaker**, The 10th International Conference on Computers, Communications and Systems (ICCCS2009), November 6th, Daegu University, Korea.


CONFERENCE CHAIRMAN

PROGRAM CHAIRMAN


GENERAL VICE CHAIR

PROGRAM ADVISORY BOARD MEMBER
Advisory Board Member for Program Committee, The 10th International Conference on Computers, Communications and Systems (ICCCS2009), November 6th, Daegu University, Korea.

PROGRAM COMMITTEE MEMBER
The 16th Transdisciplinary Science World Conference, SDPS, Dallas, 2010.
The 12th World Conference on Integrated Design & Process Technology, May 31- June 5, 2009, Dallas, TX.
The World Congress on Computer Science and Engineering, July 13-17, 2009, Las Vegas, U.S.A.
The 11th World Conference on Integrated Design & Process Technology, June 1-6, 2008, Taiwan.
The 7th International Conference in AI & Expert Systems Applications, Nov. 9-10, 1995, U.S.A.  
The 4th Golden West International Conference in Intelligent Systems, June 12-14, 1995, U.S.A.  

INTERNATIONAL EDITORIAL BOARD MEMBER  
GConference.net (http://gconference.net/eng/index.html), established by AICT.  

SOCIETY  

TEACHING EXPERIENCE  
TEXAS A&M UNIVERSITY – COMMERCE  
GRADUATE COURSES  
Introduction to Computer Programming (C) (CSCI515) (3 semesters)  
Introduction to Database Systems (CSCI526) (38 semesters)  
Advanced Databases and Data Mining (CSCI527) (36 semesters)  
Artificial Intelligence (CSCI538) (6 semesters)  
Operating Systems (CSCI530) (38 semesters)  
Automata Theory (CSCI549) (40 semesters)  
Introduction to Compiler Theory (CSCI 555) (2 semesters)  
Advanced Network Programming (CSCI 553) (26 semesters)  
Data Warehousing (CSCI589) – (24 semesters)  
Special Topics on Intelligent Systems (CSCI 597) (12 semesters)  
Freshman Success Seminar (CAS 111) (8 semesters)  

TEXAS A&M UNIVERSITY – COMMERCE  
UNDERGRADUATE COURSES  
Introduction to Computer Programming (C) (CSCI151)  
Systems Programming(CSCI 364)  
Introduction to Operating Systems (CSCI 430)
SOUTHERN METHODIST UNIVERSITY
UNDERGRADUATE COURSES
Introduction to Computing (CSE 1314)
Computer Programming for Eng. & Science (CSE 1316)
Programming Languages (CSE 3342)

RESEARCH GRANTS - last 3 years only


PUBLICATIONS

BOOKS


BOOK CHAPTERS


JOURNAL PAPERS AND PROCEEDINGS (ALL PEER REVIEWED AND REFEREED) – LAST 5 YEARS ONLY


Published invited talk, “Foundations on Data and Visual Analytics (FoDAVA) – next generation search engine for better information and better answers”, 62 slides, The 10th International Conference on Computers, Communications and Systems (ICCCS2009), November 6th, Daegu University, Korea.


Dr. Derek Shawn Harter, BSc, MSc, PhD

Assistant Professor
Journalism 208
Department of Computer Science
Texas A&M University
Commerce, TX 75429-3011

Nationality: US Citizen
Derek_Harter@tamu-commerce.edu
http://derekharter.com
Tel: (903) 453-7925
Fax: (903) 886-5404

Employment

Fall 2004-present  Assistant Professor, Department of Computer Science, Texas A&M University - Commerce.
2000-2001 Research Scientist, ONR MURI Grant N00014-00-1-0600 Why2000, University of Memphis.
1994-1998  Senior Software Engineer, Research and Development, MCImetro, Reston, VA
1990-1994  Software Engineer, Hughes Network Systems, Germantown, MD

Education

1998-2004  University of Memphis, Memphis, TN
Department of Mathematics and Computer Science
PhD, Computer Science
Computational Neurodynamics Laboratory (Dr. Robert Kozma)
Institute for Intelligent Systems (Dr. Stan Franklin, Dr. Arthur C. Graesser)
Graduated with Distinction
PhD Thesis:
“Towards a Model of Basic Intentional Systems: Chaotic Dynamics for Perception and Action in Autonomous
Adaptive Agents”

1992-1994 Johns Hopkins University, Baltimore, MD
Department of Computer Science
MSc, Computer Science with concentration Artificial Intelligence
Graduated with Honors
MSc Thesis:
“Simple Voice Recognition System for Remote Control of Entertainment Devices”

1986-1990 Purdue University, West Lafayette, IN
Department of Computer Science
BSc, Computer Science

Publications

Journal Articles


Peer-Reviewed Conference Publications


(IJCNN’01), pages 633-637, Washington, D.C.


Under Review


Lu, S., Pierce, D., Harter, D., Rawlinson, T. G. (under review). Enacting actions in real versus simulated environments.

Invited Talks


Conference Presentations


Harter, D. (2005). Applications of IDS: Mead’s Challenge, What is Going on Here?. Invited talk at the 2005 International Joint Conference on Neural Networks (IJCNN’05) Workshop on Intentional Dynamical Systems, Montreal, Canada,


France.


**External Grants**


**Internal Grants**


**Awards**

2006 Travel Award, $750, NSF Carnegie Mellon University Embodiment Symposium.

2006 Travel Award, $1500, NSF Large Scale Random Graph Workshop.

2004 National Academy of Sciences Research Associateship Awardee, 12 Month NASA/JSC.
2001 Travel Award, $500, NSF Travel Grant Cognitive Science Society.
2001 Travel Award, $750, Cognitive and Neural Systems.

---

**Academic Experience**


**Professional Memberships:** Association of Computing Machinery (ACM), Cognitive Science Society, Institute of Electrical and Electronics Engineers (IEEE), Society of Adaptive Behavior, American Institute of Aeronautics and Astronautics.

---

**Teaching**

**Instructor:**

Texas A&M University - Commerce:
- Spring 2010: High Performance Computing
- Spring 2010/09/08/07/06: Unix Programming and Networking
- Fall 2009/07, Spring 2006: Graduate Artificial Intelligence
- Fall 2009/07, Spring 2006: Undergraduate Artificial Intelligence
- Fall 2009/08, Spring 2005: Graduate Operating Systems
- Fall 2009/08, Spring 2005: Undergraduate Operating Systems
- Spring 2009/08: Undergraduate Unix Programming
- Spring 2009: Object Oriented Programming
- Fall 2008: Fundamentals of Programming Lab
- Spring 2008: Unix Network Administration
- Spring 2008/07, Fall 2008/07/06: Java Programming
- Fall 2008: Microcomputer Applications
- Summer 2008/06, Fall 2005/04, Spring 2005: Undergraduate Programming II
- Fall 2008/05: Robotics and Autonomous Systems
- Spring 2007: Linux and Python Software Development
- Spring 2007: Programming Languages
- Summer 2008/05, Fall 2004: Data Structures
- Spring 2010/09/07, Fall 2009/08, Summer 2009/07: Thesis
- Spring 2010/08/07/06/05, Fall 2008/07/06/05/04: Research Literature and Techniques

University of Memphis:
- Spring 2004: Expert Systems and Prolog
- Summer 2004: Data Structures
- Fall 2001: Dynamics of Memory and Cognition

**Graduate Advisor:**
- Pratyush Koturu, MSc, PhD, 2006-present.
- Devin Pierce, PhD, 2007-2010.
- Chris Jones, MSc, 2009-present.
- Gideon Mazambani, MSc, 2008-2009.
- Terry Rawlinson, MSc, PhD, 2007-present.
Postdoctoral Advisor:
Linbao Zhang, postdoctoral associate, 2010-present.

Mentor:
Over 25 graduate and undergraduate student research projects and honors projects, 2004-present.

Academic Service

2010-present: Computational Sciences Ph.D. Degree Program Development Committee.
2008-present: Computer Science Graduate Curriculum Review Committee.
2008-present: TAMUC Faculty Development Committee.
2010, Spring: TAMUC Graduate Expo, Mesquite Metroplex Center.
2010, Spring: Judge, University Interscholastic League Academic Meet, Computer Science Regional.
2009, Fall: University Days Department of Computer Science organizer and mentor.
2009, Spring: Mentor TAMUC National Cyber Defense Team competition.
2009, Spring: Judge, University Interscholastic League Academic Meet, Computer Science Regional.
2008-2009: Professional Sciences Master's Degree Program Committee.
2008-2009: College of Arts and Sciences Dean Advisory Search Committee.
2008, Fall: TAMUC University Days Presenter, Computer Science Breakout Session.
2008, Spring: Ad Hoc CSIS College of Business Committee.
2008, Spring: Judge, University Interscholastic League Academic Meet, Computer Science Regional.
2007, Fall: TAMUC University Days Presenter, Computer Science Breakout Session.
2007, Spring: Judge, University Interscholastic League Academic Meet, Computer Science Regional.
2006, Spring: Judge, University Interscholastic League Academic Meet, Computer Science Regional.
2006: Co-Organizer TAMUC Brain, Computation and Mind brown bag seminars
2005, Fall: TAMUC University Days Computer Science Department organizer and mentor
2004-2008: ACM Student Chapter Faculty Advisor
2004-2005: Computer Science ABET Committee
2004-2005: Computer Science Curriculum Committee
2004, Fall: Mesquite Metroplex Center Mentoring Workshop
2004, Fall: TAMUC University Days Computer Science Department organizer and Mentor

Professional References

1. Dr. Sam Saffer, Full Professor
   Department of Computer Science
   Texas A&M University, Commerce TX 75429
   (903) 886-5401
   Sam_Saffer@tamu-commerce.edu
   http://cs.tamu-commerce.edu/

4. Dr. Peter Hastings, Associate Professor
   Department of Computer Science,
   DePaul University
   243 S. Wabash Ave, Room 640, Chicago, IL 60604
   (312) 362-5736
   peterwh@cti.depaul.edu
   http://reed.cs.depaul.edu/peterwh
2. **Dr. Robert Kozma, Full Professor, Director**  
Department of Computer Sciences  
Computational Neurodynamics Laboratory  
University of Memphis, Memphis TN 38152  
(901) 678-2497  
rkozma@memphis.edu  
http://www.cs.memphis.edu/~rkozma

3. **Dr. Arthur C. Graesser, Full Professor, Director**  
Department of Psychology  
Institute for Intelligent Systems  
University of Memphis, Memphis TN 38152  
(901) 678-4857  
a-graesser@memphis.edu  
http://sites.google.com/site/graesserart

5. **Dr. Carlos A. Bertulani, Full Professor**  
Department of Physics and Astronomy  
Texas A&M University - Commerce  
Commerce, TX 75429  
(903) 886-5882  
Carlos_Bertulani@tamu-commerce.edu  
http://faculty.tamu-commerce.edu/cbertulani

6. **Dr. Tracy B. Henley, Full Professor & Head**  
Department of Psychology & Special Education  
Texas A&M University - Commerce  
Commerce, TX 75429  
(903) 886-5594  
Tracy_Henley@tamu-commerce.edu
Abdullah N. Arslan
Assistant Professor
Texas A & M University – Commerce
Department of Computer Science and Information Systems
JOUR 206, Phone: 903 468 3097, e-mail: Abdullah_Arslan@tamu-commerce.edu

EDUCATION
2002. PhD in Computer Science, University of California, Santa Barbara, CA
1996. MS in Computer Science, University of North Texas, Denton, TX
1990. BS in Computer Engineering, Middle East Technical University, Ankara, Turkey

ACADEMIC APPOINTMENTS
2009-Present. Assistant Professor, Department of Computer Science and Information Systems, Texas A & M University - Commerce
2002-2009. Assistant Professor, Department of Computer Science, University of Vermont

BOOK CHAPTERS
(a peer-reviewed chapter)


JOURNAL PUBLICATIONS

Arslan, A. N. (2007) Regular expression constrained sequence alignment. Journal of Discrete Algorithms, Elsevier, 5(4), 647-661 (available online: http://dx.doi.org/10.1016/j.jda.2007.01.003), (the formulation of sequence alignment presented in this paper was adopted in the alignment tool RE-MuSiC as reported in an article in Nucleic Acids Research in 2007)


Arslan, A. N., Egecioglu, O. and Pevzner, P.A. (2001) A new approach to sequence comparison: normalized sequence alignment. *Bioinformatics* 17:327-337 (the paper proposed using length-normalized scores for eliminating mosaic and shadow effects (some undesired anomalies) that arise when the common notion of sequence similarity is used. This fractional programming algorithm is strikingly fast although the optimization problem solved is complex)


**PEER-REVIEWED CONFERENCE PUBLICATIONS**


**OTHER PUBLICATIONS**


**GRANTS**

*Title: Pattern Matching with Wildcards and Length Constraints*

*Sponsor:* National Science Foundation (NSF) of the USA,

*Award No.* CCF-0514819

*PI:* Xindong Wu; Co-PIs: **Abdullah N. Arslan** and Xingquan Zhu

*Duration:* July 15, 2005 - June 30, 2008 ($200K)$
MATER STUDENTS SUPERVISED

In CS Department at the University of Vermont

  - Project: Programs for approximate dictionary look-up
- Punugu, Sirisha (2009)
  - Project: Programs for sequence alignment guided by context-free-grammar-described motifs
- Sharma, Renu (2009)
  - Project: Programs for sequence alignment with inversions
- DeHaas, Drew. (2007)
  - Project: Programs For Constrained Sequence Alignment
  - after graduation started as a "Software Engineer" at Honeywell Process Solutions
- He, Yu (2006) (co-advised with X. Wu)
  - Project: Mining Frequent Patterns With Wildcards
  - Published one journal paper, two peer-reviewed conference papers
- Zheleva, Elena (2005)
  - Thesis: Restricted Regular Expression Pattern Matching Using Suffix Trees
  - after graduation started pursuing PhD in CS at U. of Maryland, College Park
  - published a peer-reviewed conference paper
- Singh, Divya R. (2005)
  - Thesis: Faster Sequence Alignment Using Suffix Tree and Data-Mining Techniques
  - (co-Advisor: Dr. Xindong Wu)
  - after graduation started working at IBM, Burlington, currently with Microsoft Corp.
  - published a peer-reviewed conference paper

SERVICE FOR TEXAS A&M UNIVERSITY - COMMERCE

Have prepared parts of the CS comprehensive exam every semester since Fall 2009
Have served as a member of Computational Science PhD Program Proposal Task Committee since Fall 2009

SERVICE FOR THE UNIVERSITY OF VERMONT

Served the Computer Science Department as

- the Library Liaison during 2002-2005
- the Webmaster during 2002-2007
- the Technical Reports Coordinator in 2007-2008 academic year
- as a member on the committee of graduate admissions in 2007-2008 academic year, and CS curriculum committee during 2002-2008

- During 2004-2008, prepared parts of the CS MS and PhD Comprehensive Exam course contents, guidelines, and sample exams for Operating Systems, Analysis of Algorithms, and Theory of Computation; proctored, and graded parts of these exams

SELECTED SYNERGISTIC ACTIVITIES

Have been an editor for International Journal of Data Mining, Modelling and Management since 2008

Have been serving on Permanent Steering Committee Member of Biotechnology and Bioinformatics Symposium (BIOT) http://www.biotconf.org/ since 2007

Served on the Program Committee of International Symposia on Health Informatics and Bioinformatics (HIBIT) 2009 and 2010
Served on the Program Committee of the Tenth Asian Conference on Computer Vision (ACCV) 2010

Reviewed
- one paper for Pattern Recognition Journal in 2010
- two papers for the 21st International Symposium on Algorithms and Computation (ISAAC 2010)
- one paper for 17th edition of the Symposium on String Processing and Information Retrieval (SPIRE 2010)
- two papers for Biotechnology and Bioinformatics Symposium (BIOT) 2009,
- one paper for International Journal of Foundations of Computer Science in 2009,
- four papers for the Ninth Asian Conference on Computer Vision (ACCV), 2009,
- five papers for the 20th International Symposium on Algorithms and Computation (ISAAC 2009)

Before Joining Texas A&M University – Commerce:


Served on Program Committees of more than 14 international conferences in bioinformatics and algorithms

In October 2007, rated publication venues (refereed journals and conferences) in computational biology and bioinformatics to aid the tenure and advancement review process in Brigham Young University on request from their CS Department Head


Reviewed for the following conferences: Combinatorial Pattern Matching Symposium (CPM), ACM-SIAM Symposium on Discrete Algorithms (SODA), Research in Computational Molecular Biology (RECOMB), International Conference on Implementation and Application of Automata (CIAA), International Conference on Parallel and Distributed Computing Systems (PDCS), Symposium on Health Informatics and Bioinformatics Health (HIBIT), IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB), IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Bioinformatics and Biotechnology Symposium (BIOT) Asian Conference on Computer Vision (ACCV), International Symposium on Algorithms and Computation (ISAAC)

Invited lecturer: Bioinformatics Graduate Summer School (August 15-21, 2004, Sile/Turkey) (http://sci.ege.edu.tr/~biyoinformatik2/eng/ogruyeleri.htm) organized by Ege University, Yeditepe University of Turkey, and Berlin Technical University of Germany. Attended by undergraduate, graduate students, researchers, and faculty members from various disciplines, and from multiple countries including Turkey, Germany, England, and Hungary
College of Arts and Sciences

VITAE

Name: Thomas Lamar Brown

Faculty Id: 10071788

Year Appointed: 1971

Department: Computer Science and Information Systems

1. Academic Degrees:
   MBA Northeast Louisiana University Management 1968
   BS Northeast Louisiana University Management 1966

2. Professional Experience:
   Texas A&M University-Commerce August 1971-July 2010
   Tarrant County Junior College September 1970-May 1971
   North Texas Community College July 1968-August 1970
   University of Louisiana-Monroe September 1966-May 1968

3. Faculty and Administrative load:
   Fall 2009 – faculty member (fulltime)
   Spring 2009 -- faculty member (fulltime)
       Fall 2008 – faculty member (fulltime)
       Spring 2008 -- faculty member (fulltime)
       Fall 2007 – faculty member (fulltime)
       Summer 2007-- faculty member (one-fourth time)
       Spring 2007 -- faculty member (fulltime)
       Fall 2006 – faculty member (fulltime)
       Summer 2006-- faculty member (one-fourth time)
       Spring 2006 – faculty member (fulltime)
       Fall 2005 – faculty member (fulltime)
       Summer 2005-- faculty member (one-fourth time)
       Spring 2005 -- faculty member (fulltime)

4. Service Activities:
   a) University Wide: academic advisor, orientation, Undergraduate Experience Committee, Scholarship Committee, financial contributions;
   b) Departmental: search committee, curriculum development, accreditation committee,
      academic advisement, database administration, new student orientation, msdnaa administration
      (software distribution to CSci students);
c) Community: computerized record-keeping for neighborhood association.

5. Professional Association Memberships:
   a) Association for Computing Machinery;
   b) Association for Computer Educators in Texas;
   c) Computer Science Teachers Association.

6. Professional Assignments, Activities:
   a) Full-time teaching;
   b) Academic advisor writing degree plans for Computer Science & Information Systems programs;
   c) Microsoft Development Academic Alliance coordinator (distribute software to CSci students);
   c) Database administrator for faculty, students and research teams;
   d) ACM student organization advisor.

7. Publications:
   a) Refereed, adjudicated, etc.--none in last five years.
   b) Non-refereed, adjudicated--none in last five years.

8. Papers Presented, Workshops, Demonstrations, etc.:
   Academic Enrichment workshop, Girl Scout Interest Project College, Computer Camp.

9. Research:
   That research necessary to develop supporting software for teaching laboratories, server, and database administration and curriculum development responsibilities.

10. Grants, Proposals:
    none in last five years

11. Honors and Awards Received:
    Thirty-five year recognition and award

12. Other Evidence of Professional Achievement:
    a) Administration of departmental database and web servers;
    b) Development of computer-based laboratory guides, problem sets, support
software, web pages
    and course notebooks;
  c) Mastery of new hardware and software utilized in Computer Science and
      Information Systems
      programs;
  d) Completion of faculty development workshops for teaching and administering
      online courses;
  e) Development and delivery of online course in database management, and
      web-enhanced courses
      in Fundamentals of Programming, Java Programming, and Information System
      Programming,
      and Database Programming.

Vitae for College of Arts & Sciences 1/04/2005 --> 7/27/2010
Name: R. Daniel Creider, Ph.D.
Office Phone: (903) 886-5407

Academic Degrees
Ph.D., Baylor University, Waco, Texas; Major - Experimental Psychology, 1978
M.S., Texas A&M University-Commerce, Commerce, Texas; Major - Computer Science, 1979
M.S., Auburn University, Auburn, Alabama; Major - General/Experimental Psychology, 1971
B.S., Southwest Missouri State University, Springfield, Missouri; Major - Psychology, 1969
B.A., Central Bible College, Springfield, Missouri; Major - Bible/Music, 1968

Professional Experience
Texas A&M University-Commerce, Computer Science and Information Systems Department, Commerce, TX.;
   Acting Department Head, March through May 1998
   Associate Professor, August 1984 to present
   Assistant Professor, August 1978 to August 1984
Baylor University, Computer Center, Waco, Texas; graduate assistant, August 1977 to August 1978.
Baylor University, Psychology Department, Waco, Texas; graduate assistant, August 1974 to August 1977.
Texas Employment Commission, Corpus Christi, Texas; Employment Counselor: responsibilities included providing vocational counseling, aptitude test selection and analysis, job solicitation, training selection and monitoring; November 1971 to August 1974.

Service Activities
University
   Academic Advisor (undergraduate) for advising office for 1983-84 and 1984-85 school years which included a one fourth release time from teaching responsibilities.
   Computer Science Federation Program Development Committee (Chairman, 8 yr., member 27 yr.)
   Doctoral committee member on numerous (at least 24) committees for students with comprehensive or split minor in Computer Science and majors in Secondary and Higher Education, and Educational Media and Technology
   Faculty Senate (8 yrs.)
   International Student Advisory Committee (2 yr.)
   Advisor for the India Student Association from November 2009 to present

Department
   Departmental Curriculum Committee
   Departmental Faculty Search Committee
   Departmental Head Search Committee
   Departmental S.C.A.R. Committee
   Departmental Scholarship Committee
   Editor of Departmental Newsletter beginning with the Spring 1991 semester for 1 year.
   Graduate Advisor/Coordinator from Fall 1985 through Spring 1990; Fall 1992 through present. This was an administrative appointment for the 1985-86 and 1986-87 school years which included a one fourth release time from teaching responsibilities.
   Responsibilities included: reviewing applications for graduate admissions to the department; advising graduate students on course of study; reviewing curriculum; coordinating, scheduling and grading of comprehensive exam each semester.

Community
   Sanctuary musician at all regularly scheduled services at the First Assembly of God Church, Greenville, Texas.
Professional Association Memberships

Computer Society of the IEEE
Association for Computing Machinery

Publications (refered)


Presentations


Research - Funded

Contract research funded by E-Systems, Greenville Division in the area of Artificial Intelligence for the years given below:

June 1983 through December 1983 in the amount of $30,538.
April 1984 through December 1984 in the amount of $48,402.
January 1985 through May 1986 in the amount of $31,740.

Consulting

Consulted at E-Systems, Greenville Division in conjunction with a contract proposal for the Federal Government during November 1983 in the area of Human Factors and Artificial Intelligence
Grants, Proposals
Research proposal submitted to the Texas Advanced Technology Research Program in 1985 but was not funded: 
*Expert systems Integration.*

Honors Thesis Student
Walker, Grady M., *Is the Josephson Effect the Answer to the Supercomputer?*, December 1981

Thesis Students
Burks, Mike W., *User Interfaces and User Interface Management Systems: A Survey*, May 1988
Campbell, K. Scott, *Knowledge Acquisition in a Knowledge-Based Intelligence Analysis System*, December 1988
Hoover, Lucian T., *EEG Monitor Software*, May 1992
Skauge, Suzanne E., *Design and Implementation of Computerized Test Administration Software*, May 1993
White, Pablo, *The Root Word Analysis of the English Language*, May 2004

Presentations Supervised
Supervised student presentation (Joythi Pamulapati) for the 7th Annual Texas A&M University System Pathways Student Research Symposium, Nov 13-14, 2009, Laredo, TX. Topic was Programming Efficiency.

Supervised student presentation (Divya Kandala) for the 6th Annual Texas A&M University System Pathways Student Research Symposium, Nov 8, 2008, Commerce, TX. Topic was Programming Performance. Student won second place for Master’s level in Computer Science

Courses Taught
Texas A&M University-Commerce (courses in parentheses are no longer offered)

126 Introduction to Computers
(236) Introductory FORTRAN Programming
241 Assembly Language Programming
(337) Advanced FORTRAN Programming
502 Internship in College Teaching of Computer Science
504 Introduction to Computer Application
506 Introduction to Computer-Oriented Research Applications
515 Fundamentals of Programming
520 Information Structure and Algorithms Analysis
526 Database Systems
537 Advanced Concepts of Programming Languages
538 Algorithms and Programming Techniques for Artificial Intelligence Applications
539 Expert Systems
597 Neural Computing
597 Programming Performance
EDUCATION

Ph.D. in Computer Engineering, University of Alabama at Birmingham, Birmingham, AL 35294  May 2010

Master of Science, Computer and Information Sciences, University of Alabama at Birmingham, Birmingham, AL 35294  December 2005

Bachelor of Engineering, Computer Science & Engineering, Manipal Institute of Technology, Manipal, India  July 2001

TECHNICAL WORK EXPERIENCE

- Information Systems Specialist II, Neurology Chair Office, University of Alabama at Birmingham, October 2010 – July 2011

- Program Coordinator II, Neurology Chair Office, Alzheimer’s Disease Research Center, University of Alabama at Birmingham, April 2007 – October 2010

- Data Processing Specialist, Department of Pharmacy, University of Alabama at Birmingham Hospital, November 2005 – April 2007

TEACHING EXPERIENCE

- Assistant Professor, Department of Computer Science, Texas A&M University - Commerce, August 2011 – Present

- Guest Lecturer: Course# EE621, fall 2009, Instructor: Dr. Murat M. Tanik, Department of Electrical and Computer Engineering, University of Alabama at Birmingham

- Guest Lecturer: Course# EE601, spring 2010, Instructor: Dr. Thomas C. Jannett, Department of Electrical and Computer Engineering, University of Alabama at Birmingham

- Lecturer in the Department of Computer Science & Engineering, Gogte Institute of Technology, India, September 2001 – June 2003
ACADEMIC AWARDS AND HONORS

International Award

- Awarded the SDPS Leadership Award for 2011 at the annual SDPS Conference, June 12 – 16, 2011, Jeju Island, South Korea.

Regional Award


Institutional Awards and Honors

- Awarded the Outstanding Graduate Student in Electrical and Computer Engineering at the University of Alabama at Birmingham for the academic year 2009 – 2010.
- Awarded the UAB Service Award for excellence in service at the University of Alabama at Birmingham.
- Nominated for the Outstanding Graduate Engineering Student Award at the University of Alabama at Birmingham for the academic year 2009 – 2010.
- Nominated for the University of Alabama at Birmingham President’s Diversity Award 2010 under the category of Professional Student involved in diverse activities at UAB.
- Award winning Internet Banking System (final year undergraduate project), Manipal Institute of Technology, India, Graduating Year: 2001.

SERVICES

- Reviewer for ACM Computing Reviews, ISSN 1530-6586.
- Chair, Registration Committee, SDPS 2011 Conference, June 12-16, 2011, Jeju Island, South Korea.
- Member, Technical Program Committee (Reviewer) for IEEE Southeast Conference 2011, March 17-20, 2011, Nashville, TN.
- Member, Program Support Committee, 15th SDPS Conference, June 6-11, 2010, Dallas, TX.
- Member, Technical Program Committee (Reviewer) for IEEE Southeast Conference 2010, March 18-21, 2010, Charlotte, NC.
- Session Chair, IEEE Southeast Conference 2009, March 5-8, 2009, Atlanta, GA.
- Member, Technical Program Committee (Reviewer) for IEEE Southeast Conference 2009, March 5-8, 2009, Atlanta, GA.
- Session Chair, Twelfth Conference SDPS Transdisciplinary Conference on Integrated Systems, Design and Process Science, November 1-5, 2009, Montgomery, AL.

PRESENTATIONS


PUBLICATIONS

Dissertation


Refereed Journal Papers

Edited Book


Book Chapters


Refereed Conference Papers


**Poster**


**Published Abstracts**


**Published Reviews with ACM Computing Reviews**


• Beginning iPhone development: Exploring the iPhone SDK
• Implementing automated software testing: how to save time and lower costs while raising quality, Dustin E., Garrett T., Gauf B., Addison-Wesley Professional, 2009. 368 pp. Type: Book, ACM Computing Reviews, September 8 2009, Published Online.

COMPUTER SKILLS

• Languages: C, Java, JSP, HTML and XML.
• Tools and frameworks: GME, AspectJ, AspectC++, Jena 2, CMAP Tools, and Telelogic TAU.
• Databases: MS Access and Oracle7.x.

OTHER ACTIVITIES

• President, Society for Entrepreneurship in Business and Engineering (Student’s Chapter) between 2007-2009.
• Member, Institute of Electrical and Electronics Engineers (IEEE) national chapter, 2008-present.
• Member, Program Support Committee, Society for Design Process Science (SDPS) 2010 conference.
• Member, SDPS, 2008-present.
• Member, SDPS transition committee, 2008-present.
• Nominated as an executive member of Indian Society for Technical Education (ISTE) Students’ Chapter for the year 2000 – 2001.
• Participant, Workshop, “How to Achieve Transdisciplinarity in Software Engineering
Education,” November 3, 2009, AUM, Montgomery, AL.


Name: Sandra C. Huerter  
ID#: 101-47-673  
Year Appointed: 1981  
Department: Computer Science and Information Systems

Academic Degrees
East Texas State University  M.S. in Computer Science, 1980  
Kansas State University  B.S. in Mathematics, 1970

Professional Experience
Texas A&M University - Commerce  
Instructor of Computer Science, Sep 1981 to present

East Texas State University  
Ad Interim Instructor of Computer Science, Jan 1981 to Aug 1981

East Texas State University  
Assistant Instructor of Computer Science, Jan 1980 to Dec 1980

AT&T Long Lines Division, Kansas City, Missouri  
Programmer (COBOL, Assembly), Jun 1970 to Dec 1971

Faculty and Administrative Load
Spring 2010  
CSCI 126.01W  Microcomputer Applications (online)  
CSCI 126.002  Microcomputer Applications  
CSCI 152.001  Programming Fundamentals II  
CSCI 270.001  Data Structures  
CSCI 405.001  Internship

Fall 2009  
CSCI 151.001  Programming Fundamentals I  
CSCI 151.002  Programming Fundamentals I  
CSCI 152.001  Programming Fundamentals II  
CSCI 270.001  Data Structures  
CSCI 405.001  Internship

Spring 2009  
CSCI 151.003  Programming Fundamentals I  
CSCI 152.001  Programming Fundamentals II  
CSCI 152.002  Programming Fundamentals II  
CSCI 270.001  Data Structures

Fall 2008  
CSCI 151.001  Programming Fundamentals I  
CSCI 151.002  Programming Fundamentals I  
CSCI 152.001  Programming Fundamentals II  
CSCI 270.001  Data Structures

Spring 2008  
CSCI 151.003  Programming Fundamentals I  
CSCI 152.001  Programming Fundamentals II
Service Activities

University:

- Serving as a member of the Mayo Scholarship Selection Committee for approximately 17 years.
- Serving as a member of the University Discipline Committee for approximately 11 years.
- Serving as a member of the departmental Tenure Evaluation Committee evaluating the performance of faculty in the pre-tenure probationary process.
- Served as Manager of the Degree Audit component of the Student Information System from pre-implementation of the system to Fall 2006.
  - Served as head of the implementation team and was primarily responsible for implementing all undergraduate programs.
  - Implemented doctoral and master’s programs for the degree audit. Created training materials, conducted training workshops for doctoral advisors, and trained Graduate School personnel to handle exceptions.
  - Worked with the offices of the Registrar, Educator Certification, Transfer Admissions, Testing, Graduate School, and individual academic departments to upgrade and maintain the degree audit system database.
  - Worked with SCT programmers to complete upgrades to the degree audit program and to resolve errors and conflicts in the program code. Participated in a list with other schools using the same software to help with identifying and troubleshooting problems.
  - Worked with Web Services to create web pages containing degree audit information. Any student or advisor will now be able to access via the Internet a file detailing the audit requirements for any major, second major, minor, teaching field, or program add-on. A student can get a list of all possible majors, all possible minors, second majors, and teaching fields when exploring his/her choices.
  - Implemented the new catalog for the degree audit each summer, creating new programs and modifying existing programs according to the catalog changes submitted. Notified each department of any course renumberings or deletion of courses required by their programs to keep them advised of changes made by other departments. Aided in keeping the undergraduate catalog current by notifying departments of any discrepancies in their catalog copy.
o  Wrote a 44-page manual for faculty advisors on using the degree audit. This manual was updated every semester as needed.

o  Created course materials and documentation and trained all faculty advisors and staff on the use of the degree audit. Training sessions are held every semester for new faculty and staff.

o  Trained representatives from each college to code exceptions for student degree plans using the degree audit.

• Researched and developed a document detailing the university’s electronic network capability. This document provided instruction for faculty, staff, and students in all departments on using electronic mail.

• Researched and created documentation for mainframe and personal computer applications critical to students and faculty in Computer Science courses and used by students and faculty in other departments as well.

• Developed and conducted electronic mail workshops for Faculty Development Committee, 1993

Departmental:

• Hired and supervised undergraduate student tutors working to help students in lower-level undergraduate programming courses

• Served as a member of:  Undergraduate Curriculum Committee  
  Master Teacher Committee  
  Computer Science Certification Committee  
  Computer Science Seminar Committee  
  Admission Standards Committee  
  Student Evaluation Committee

• Served as undergraduate advisor, writing degree plans, advising incoming freshman and transfer students, disseminating information regarding our programs to prospective students, counseling students already in the program.

• Helped to create new curricula for Computer Science and for Computer Information Systems programs as well as a new teaching program leading to secondary certification in Computer Science.

• Helped to prepare documentation for an ABET accreditation visit.

• Created and maintained student handouts detailing all degree options offered by the department and approved courses for technical electives and University Studies. These documents are used as informational brochures for prospective students, by faculty in advising students, by students in tracking their degree progress, and by the Academic Advisement office to provide better information to potential Computer Science or Information Systems majors.

• Reviewed the undergraduate curriculum each spring and often prepared the documentation for changes to the undergraduate catalog to be submitted to the Coordinating Board.

Community:
Served as Contest Director for the regional (and sometimes also district) Computer Science contests (both written exam and programming component) from approximately 1995 to present.

Professional Association Memberships
Association for Computing Machinery
Computer Society of the IEEE
Consortium for Computing Sciences in Colleges

Professional Assignments, Activities
Received a series of part-time appointments (25 - 75%) from 1995 to 2006 to work for the Vice-President for Academic Affairs on the Degree Audit component of the Student Information System. Headed a team to develop the encoding for degree programs in all departments of the university. Primarily responsible for implementation of the Degree Audit. Served as Manager of the system until the switch-over to the Banner SIS in 2006.

Produced editorial reviews of Computer Science textbooks and prepared marketing reviews for MacMillan Publishing Company and Holt, Rinehart and Winston.

Publications
In-house documentation written for use by university students, faculty, and staff:
• Degree Audit Manual, 1998-2004
• Tutorial Supplement for the Ada Language, 1987-2004
• Tutorial Supplement for the COBOL Language, 1987-2004
• Using Object Ada, 2000-2004
• Using Fujitsu COBOL 3.0, 1998-2004
• Using Gnat Ada, 1997-2004
• UNIX COBOL User’s Guide, 1995
• Beginner’s Guide to Electronic Mail at ETSU, 1994
• User’s Guide to Turbo Pascal, 1992
• Tutorial Supplement for the C++ Language, 1992-2001
• A User’s Guide to Electronic Mail at ETSU, 1991
• Using Quick C in the Library Microcomputer Lab, 1991
• Using Turbo Pascal in the Library Microcomputer Lab, 1991
• Tutorial Supplement for the C Language, 1988
Research

- Developed new courses:
  - CSci 152 Computer Programming II
  - CSci 321 Survey of Algorithmic Languages
  - CSci 523 Computer Languages.
- Devised significant revisions to at least six existing courses.
- Researched methods for effectively using new features and for solving problems in the Degree Audit system.
- Researched and created documentation for mainframe and personal computer applications critical to students and faculty in Computer Science courses and used by students and faculty in other departments as well.

Honors and Awards Received

- 'Best Service to the College' Award presented by the Dean of Arts & Sciences, 2000
- 1989-90 TACT Teaching Excellence Award
- Nominated for the 1990 Distinguished Faculty Award
JINOH KIM

Department of Computer Science
Texas A&M University–Commerce
2600 S. Neal, Commerce, TX 75428

Phone: (903) 468-6084
Email: Jinoh.Kim@tamuc.edu
Web: http://faculty.tamuc.edu/jkim/

EDUCATION

University of Minnesota, Twin Cities, Minnesota 2005–2010

Doctorate in Computer Science (Ph.D.)
DISSERTATION: Data Dissemination for Distributed Computing
Advisors: Dr. Jon B. Weissman and Dr. Abhishek Chandra

Inha University, Incheon, South Korea 1991–1994

Master of Science in Computer Science (M.S.)
THESIS: Routing Algorithms for Multipoint Connection in Hierarchically Structured Networks
Advisor: Dr. Kyun-Ha Lee

Inha University, Incheon, South Korea 1985–1991

Bachelor of Engineering in Computer Science and Engineering (2-year military service in-between)

EMPLOYMENT

Assistant Professor, Texas A&M University–Commerce August 2012–present

Assistant Professor, Lock Haven University of Pennsylvania October 2011–July 2012

Postdoctoral Researcher, Lawrence Berkeley National Lab March 2010–August 2011

Research Counselor, Beckman Coulter Inc. August 2009–February 2010

Teaching Assistant, University of Minnesota September 2008–May 2009

Research Assistant, University of Minnesota June 2006–August 2008

Senior Researcher, ETRI, Korea July 2001–August 2005


RESEARCH INTERESTS

- Distributed Systems; Computer Networks and Security
- Big Data Computing; Cloud Computing; High-performance Computing
- Energy-proportional Computing; Energy-efficient Systems
TEACHING EXPERIENCE

*Assistant Professor:* Computer Science Department, Lock Haven University of Pennsylvania, 2011–2012.

- **Courses:** Introduction to Computers, Advanced Microcomputer Applications

*Teaching Assistant:* Department of Computer Science & Engineering, University of Minnesota, 2008–2009.

- **Courses:** Introduction to Computer Networks

RESEARCH EXPERIENCE


- Developing mechanisms for energy proportionality for datacenter storage systems and MapReduce clusters
- Algorithm design for parallel bitmap index (or FastBit) generation for high-performance, data-intensive scientific computing


- Developing a framework for passive network performance estimation for data-intensive applications
- Empirical study of node characterization to estimate data access capability for each node based on past downloading history
- Algorithm design for efficient data dissemination for global sharing of measurements with limited communication overheads
- Performance modeling for collective data access for bag-of-task applications with a quantitative group performance metric (communication makespan)


- Design and performance analysis of scheduling algorithms for time-critical clinical automation systems
- Developing a simulator for both qualitative and qualitative comparisons for scheduling algorithms


- **Project:** ePCRN (electronic Primary Care Research Network)
- Middleware design for a secure, distributed data service over OGSA-DAI/Globus standard toolkits
- Design and implementation of a directory service based on jUDDI

*Research Assistant:* Department of Computer Science & Engineering, University of Minnesota, 2006.

- **Project:** MINDS (Minnesota Intrusion Detection System)
• Performance evaluation for parallel execution of intrusion detection and analysis software in Grid computing environments
• Developing a framework for distributed retrieval and subscription of intrusion detection analysis data

**Senior Researcher**: ETRI, Korea, 2001–2005.

• Correlation analysis of intrusion alerts and classification of network attacks based on alert correlations for anomaly detection
• Design of policy-based security management framework based on role-based policy control model
• Division task force work for designing high-level pictures of next-generation security architecture for nation-wide network protection and monitoring


• High-level design of ATM switching systems for system and network management
• Collaborating with the ADC Telecommunications for ATM switching system development (Visiting Engineer)


• Developing system management functions on embedded Platforms (**Award**: *ETRI Prize Winner of Outstanding Research Staff*, 1997)
• Inter-operability study of IP accommodations in ATM networks (IP over ATM, Next Hop Resolution Protocol, MPLS (Multi-Protocol Label Switching))
• Design and implementation of standard network management functions for ATM systems (SNMP MIBs)
• Design and implementation of standard ATM protocols (ATM UNI signalling, P-NNI, ILMI, etc)

**Awards and Honors**

• Travel grant for ICDCS (*IEEE International Conference on Distributed Computing Systems*), National Science Foundation, 2008.
• Travel grant for ICDCS (*IEEE International Conference on Distributed Computing Systems*), Graduate and Professional Student Assembly, University of Minnesota, 2008.
• Prize Winner of Outstanding Research Staff, ETRI, Korea, 1997.

**Professional Activities and Services**

Member of ACM and IEEE.

Reviewer for:

• IEEE International Conference on Networking, Architecture, and Storage (NAS 2011)
• Scientific and Statistical Database Management Conference (SSDBM 2011)
• International Conference on Parallel Processing (ICPP 2009)
• IEEE International Workshop on Quality of Service (IWQoS 2009)
• IEEE/ACM International Conference on Grid Computing (Grid 2008)
• ACM International Symposium on High-Performance Distributed Computing (HPDC 2008)
• IEEE Transactions on Computers (ToC 2010, 2011)
• Future Generation of Computer Systems (FGCS 2010)
• Cluster Computing (CC 2009, 2010)
• Journal of Systems and Software (JSS 2007)

Publications

Book Chapters:


Journal Articles:


Selected Conference Papers:


• Jerry Chou, 


Patents


REFERENCES

• Jon B. Weissman
  Associate Professor
  University of Minnesota
  (612) 626-0044
  jon@cs.umn.edu

• Abhishek Chandra
  Associate Professor
  University of Minnesota
  (612) 626-1283
  chandra@cs.umn.edu

• Doron Rotem
  Senior Scientist
  Lawrence Berkeley National Lab
  (510) 486-7641
  D_Rotem@lbl.gov

• Arie Shoshani
  Head, Scientific Data Management Group
  Lawrence Berkeley National Lab
  (510) 486-5171
  shoshani@lbl.gov

Last updated: October 17, 2012
MUTLU METE, Ph.D.
Assistant Professor
Department of Computer Science and Information System
Texas A&M University - Commerce

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Commerce, TX 75429 919
E-mail: Mutlu_Mete@tamu-commerce.edu

Phone: (903) 886-5497
Fax: (903) 886-5404

Education

2003-2008, University of Arkansas at Little Rock, Little Rock, AR, USA
Doctor of Philosophy, Applied Science, emphasizing Applied Computing

Research Interests

- Data Mining and Knowledge Discovery
  - Clustering of multidimensional data
  - Feature engineering
  - Text mining
- Computer Vision
  - Quantification of tumor regions
  - Vessel detection in histopathological images
  - Unsupervised image normalization
  - Hierarchical design of subimages
  - Color models
- Bioinformatics
  - Statistical analysis of microarray data
  - Protein-Protein interaction networks
  - Color models for medical images
- Complex Networks
  - Clustering of meaning groups
  - System level analysis
  - Centrality ranking of objects
- Grid Computing
- Parallization of sequence search algorithms
- Clustering of virtual slides
- Work load prediction
- Distributed GPUs

## Research Experiences

Assistant Professor, 8/2009- present
Computer Science Department, Texas A&M University - Commerce

Information Technology, University of Arkansas for Medical Sciences

## Teaching Experiences

Graduate Courses, Texas A&M University – Commerce
- Database Systems, CSCI 526
- Neural Networks, CSCI 560
- Fundamentals of Programming, CSCI 515

Guest Instructor, UALR/UAMS Joint Graduate Program in Bioinformatics, Spring 2009
Introduction to Bioinformatics Systems, BINF 2345

## Publications

### Book Chapters

1. Xiaowei Xu, Mutlu Mete, Nurcan Yuruk, Daniel Berleant, Knowledge Discovery in Textual Databases: A Concept-Association Mining Approach, Data Engineering: Mining, Information, and Intelligence by Springer, 2009


### Journal Publications

3. Mutlu Mete, Nurcan Yuruk, Xiaowei Xu, Density Based Clustering Algorithm for Large Scale Networks, in submission, invited to IEEE Transactions on Knowledge and Data Engineering


5. Sinan Kockara, Mutlu Mete, Bernard Chen, Kemal Aydin, Analysis of Density Based and


Conference Publications (Peer Reviewed)


11. Vincent Yip, Mutlu Mete, Umit Topaloglu, Sinan Kockara, Concept Discovery for Pathology Reports using an N-gram Model, AMIA Summit on Translational Bioinformatics, 2010


14. Xiaowei Xu, Mutlu Mete, Nurcan Yuruk, Thomas A. J. Schweiger. Finding Clusters of Mixed Shapes in Large Networks, International Conference on Advanced in Social Network Analysis and Data Mining (ASONAM'09)


2007, Omaha, Nebraska


19. Xiaowei Xu, Mutlu Mete, Nurcan Yuruk, Mining Concept Associations for Knowledge Discovery from Large Textual Databases, 20th Annual ACM Symposium on Applied Computing (ACM SAC 2005), March 13-17, 2005, Santa Fe, New Mexico


21. Xiaowei Xu, Mutlu Mete, Nurcan Yuruk, Removing Redundancy and Inconsistency in Memory-Based Filtering, Acxiom Conference on Applied Research in Information Technology, February 2005, Conway, Arkansas

**Dissertation**

22. Mutlu Mete, Delineation of Malignant Areas in Histological Images of Head and Neck Cancer, University of Arkansas at Little Rock, August 2008

**Invited Talks**

- Structural Clustering Algorithms for Complex Networks, Research Seminar Series at Computer Science Department, University of Central Arkansas, November 2008, Conway, Arkansas
- Concept Associations in Large Textual Databases, Acxiom Conference on Applied Research in Information Technology, February 2005, Conway, Arkansas
- Mining Concept Associations for Knowledge Discovery in Medline Corpus, Second Annual Conference of the MidSouth Computational Biology and Bioinformatics Society, October 2004, Little Rock, Arkansas

**Patents**

- Image Processing Apparatus and Method for Histological Analysis, Gal Shafirstein, Xiaowei
Xu, Mutlu Mete, in progress (USPTO Application #: 20080205776)

**Awards & Achievements**

- Best Poster, 4th MCBIOS Conference, New Orleans, Louisiana
- Graduate Fellowship, 2003-2008
- Alpha Epsilon Lambda Member

**Computer Skills**

- Languages: Java, C++, Perl, Matlab, Python, Php, CGI, SQL, Pascal, Assembly (MASS, GAS), Unix Shell Scripts
- Tools: Oracle, MySQL, ArrayTrack, Agilent's Feature Extraction, Apple Grid Computing
- Libraries: ImageJ, BioPerl, LibTiff, OpenMPI, Java Advance Imaging
- Devices: Nikon Virtual Slider, Aperio ScanScope
- Trainings: Matlab Image Processing (4 days), Aperio ScanScope (3 hours)

**Professional Services**

- Reviewer for Evolutionary Bioinformatics, Libertas Academia
- Reviewer for IEEE Transactions on Knowledge and Data Engineering
- Reviewer for IEEE International Conference on Data Mining
- Reviewer for IEEE International Conference on Data Engineering
- Session chair at IEEE Bioinformatics and Biomedicine, November 2-4, 2007, Silicon Valley, California
- Member, Central Arkansas Statistic Association
- Reviewer for Algorithms for Molecular Biology
- Reviewer for Journal of Electronic Imaging
- Reviewer for Journal of Computerized Medical Imaging and graphics
- PC Member in 9th Int. Conf. on Information Technology and Applications in Biomedicine (ITAB 2009)
SHELLEY (SAM) SAFFER, Ph.D.
P.O. Box 3011
Commerce, Texas 75429
903-886-5401

EDUCATION:
1963-1968  B.A.  University of Texas at Austin
1968-1970  M.A.S. Southern Methodist University
1970-1973  Ph.D.  Southern Methodist University

Graduate Major:  Computer Science
Graduate Minor:  Operations Research

SUMMARY:
Former Department Head at two Universities, tenured Full Professor, Department of Computer Science, Texas A&M-Commerce. Career objectives include teaching undergraduate and graduate Computer Science courses. Research interests include Non-Linear Signal Processing, Networking, Computer Graphics, Database Systems, Intelligent Database Systems, Expert Systems, and Artificial Intelligence. Previous computer science experience in both academic and industrial environments with emphasis on software design and development. Strong background in real-time computing, database management systems, and communications.

TEACHING EXPERIENCE:
Texas A&M-Commerce - Tenured Full Professor (1995-present)  
Department Head (1995-2007)  
Oklahoma City University - Associate Professor (1990-1995)  
Texas Woman's University - Associate Professor (1980-1983)  
University of Texas Health Science Center - Assistant Professor: Joint Computer Science Program with UT Dallas.

COURSES TAUGHT:
PROFESSIONAL EXPERIENCE:
May 2007 – Present Texas A&M University –Commerce
Tenured Professor, Department of Computer Science

Jan 1995 – May 2007 Texas A&M University -Commerce
Department Head, Tenured Professor,
Department of Computer Science and Information Systems.

Jun 1990 - Dec.1995: Oklahoma City University - Oklahoma City, OK.
Department Chairman, Associate Professor,
Department of Computer Science.
Responsibilities include graduate and undergraduate degree programs, schedule
development and budget planning, development of "off-campus" graduate degree programs
to increase enrollment, graduate teaching, graduate student advising, graduate and
undergraduate Computer Science curriculum development.

Mar.1986-1989: AMDAHL COMMUNICATIONS DIVISIONS Richardson, TX.
Senior Software Engineer.
Project manager for the Amdahl 4510 NMU. Responsible for the design and
implementation of the Network Management Unit for the 4510 (X.25 network
communications switch). Extensive "C" programming, Xenix, X.25. Member of the
software development team responsible for the implementation a new "PAD",(Packet
Assembler Disassembler) product. Project involved Pascal programming. Work in a special
architecture group whose function is to study design and feasibility of new communication
products,(TI multiplexors, ISDN, SNA related products).

Senior Software Engineer
Responsible for the development of Unix and "training classes and training classes in SQL
(Structured Query Language) for INFORMIX. Also responsible for Unix technical and
sales support, and general support of Informix.

Feb.1984-May 1985: UNITED TECHNOLOGIES BUILDING SYSTEMS DIVISION, Dallas, TX.
Senior Software Engineer
Work in database management systems applied to a communications switching (UTX-250);
extensive "C"programming, Ingres, VAX-11/780.

Technical Consultant.
Responsible for design and implementation of various database management applications.
   Associate Professor, Department of Math and Computer Science.
   Developed Computer Science undergraduate curriculum and proposals for the
   establishment of an undergraduate and graduate Computer Science degree program.
   Teaching responsibilities included graduate and undergraduate Computer Science courses.
   Research in digital signal processing and prediction of ultrasound signals.

   Consultant at the University of Texas Health Science Center, Dallas, Texas, where
   responsibilities included continuing maintenance of a relational database system, the
   development of data retrieval and reporting programs, statistical analysis programs as well
   as system hardware evaluation and software development of various small systems. Also
   responsible for writing and presenting proposals for project funding.

1975-1980: UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER, Dallas, TX.
   Assistant Professor
   Full member of graduate faculty with responsibilities for teaching, curriculum development,
   and dissertation supervision. Responsible for implementation of real-time computing
   software for the PDP-11/45, PDP-12, PDP-8 and DEC LSI-11 systems. Applications
   included real-time data acquisition and analysis of signals from transducers and electrodes.
   Other projects included an interactive graphics system for the Tektronix 4000 series, a
   database management system for EKG data, and a communications network linking various
   small computers to central host.

   Obtained an NIH grant for a relational database management system for cardiovascular
   research. The system was implemented on a Tandem-16.

1970-1975: UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER, Dallas, Texas
   Programmer Analyst.
   Responsible for the design and implementation of real-time data acquisition and analysis
   programs. Designed small information systems using COBOL and FORTRAN.

   HARDWARE: DEC PDP-11/45, DEC LSI-11, PDP-8, PDP-12,6800,6502,8086.
   OPERATING SYSTEMS: RT-11, RSX-11M, RSTS-E, O/S-8,
   DECSYSTEM-10, DECSYSTEM-20, UNIX SYSTEM V, XENIX.

   SOCIETIES AND ORGANIZATIONS:
   IEEE, IEEE Computer Society
   ACM
   Co-program Chairman, Dallas Chapter 1975.
   Chairman of SIGBIO, Dallas 1974,1975.
PUBLICATIONS: Shelley Irving Saffer, Ph.D.


ABSTRACTS:


RECENT FUNDED GRANTS:

Corvus I: Proposal: The Development of a Unified Macro-Net Framework (UMF) and Accompanying Plug-in Analysis Knowledge Modules (PAKMs) Principle Investigators: Sam Saffer, Ph.D., Derek Harter, Ph.D., Shulan Lu, Co-Investigator: Sang Suh, Ph.D. Funded as the Corvus I Project for $60,000 Jan. 2006-May 2006. ($40,000 of $60,000 was funded for our projects within Corvis I).


National Science Foundation Grant: M2T2 - Maximizing Motivation, Targeting Technology. Investigators: Gilbert Naizer, S. I. Saffer, Tracy B. Henley, Bao-An Li. A three year grant for $990,000 under the NSF ITEST Program (Innovative Technology Experiences for Students and Teachers). Jan. 2009.

Unal Sakoglu, PhD
Assistant Professor
Computer Science Department
Texas A&M University - Commerce
2600 South Neal St (Room JOUR209)
Commerce, TX 75428 USA

e-mail: unal.sakoglu@tamuc.edu
Phone (office): +1 (903) 886-5242
Phone (mobile): +1 (505) 710-7645
Web: TBA

<table>
<thead>
<tr>
<th>Education</th>
<th>05/2006</th>
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<tbody>
<tr>
<td>● PhD, Electrical and Computer Engineering</td>
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<tr>
<td>University of New Mexico, Albuquerque, New Mexico, USA</td>
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<tr>
<td>05/2002</td>
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<tr>
<td>● MS, Electrical and Computer Engineering</td>
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<tr>
<td>University of New Mexico, Albuquerque, New Mexico, USA</td>
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<tr>
<td>05/2000</td>
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<tr>
<td>● BS, Electrical-Electronics Engineering</td>
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<tr>
<td>Bilkent University, Ankara, Turkey</td>
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<tr>
<th>Professional Experience</th>
<th>03/2011 – 08/2012</th>
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<tr>
<td>● Research Associate,</td>
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<tr>
<td>Functional Neuroimaging of Memory Lab</td>
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<tr>
<td>UT Dallas Center for Vital Longevity, Dallas, TX</td>
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<tr>
<td>04/2010 – 03/2011</td>
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<tr>
<td>● Senior Scientist, Image/Data Processing and Analysis</td>
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<tr>
<td>Translational Neuroimaging Department</td>
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<tr>
<td>Abbott Laboratories, Chicago, IL</td>
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<tr>
<td>● Senior Research Associate,</td>
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<tr>
<td>Gulf War Neuroimaging Program</td>
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<td>Department of Neuroradiology</td>
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<tr>
<td>UT-Southwestern Medical Center at Dallas, TX</td>
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<td>05/2008 – 10/2009</td>
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<tr>
<td>● Post-Doctoral Research Fellow,</td>
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<td>Medical Image Analysis Lab,</td>
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<td>The Mind Research Network, Albuquerque, NM</td>
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<td>05/2006 – 05/2008</td>
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<tr>
<td>● Post-Doctoral Researcher,</td>
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<tr>
<td>BRAIN Imaging Center &amp; Department of Neurology, University of New Mexico, Albuquerque, NM</td>
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<td>01/2004 – 05/2006</td>
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<tr>
<td>● Graduate Research Assistant,</td>
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<tr>
<td>Electrical &amp; Computer Engineering Department, and</td>
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<tr>
<td>Center for High Technology Materials, University of New Mexico, Albuquerque, NM</td>
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<td>08/2000 – 12/2003</td>
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<tr>
<td>● Graduate Teaching Assistant,</td>
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<tr>
<td>Electrical &amp; Computer Engineering Department</td>
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<tr>
<td>University of New Mexico, Albuquerque, NM</td>
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Unal Sakoglu - Vita Page 1 of 2 updated 08/2012
Present and Past Professional Memberships

- Institute of Electrical and Electronics Engineers (IEEE)
- Cognitive Neuroscience Society (CNS)
- Organization for Human Brain Mapping (OHBM)
- International Society for Magnetic Resonance in Medicine (ISMRM)
- European Society for Magnetic Resonance in Medicine and Biology (ESMRMB)
- Alzheimers Association (AA)

Reviewing Activities for Journals

- Human Brain Mapping
- Medical Image Analysis Journal
- Imaging Science Journal
- Computational Statistics and Data Analysis
- Optics Communications
Curriculum Vitae

Nikolay Metodiev Sirakov
First name Middle name Surname

Affiliation and Official Address:
Dept. of Computer Science and Info Systems
Dept. of Mathematics
Texas A&M University Commerce
Commerce, TX 75 429
Ph: (903) 886 5943; Fax: (903) 886 5945; E-mail: Nikolay_Sirakov@tamu-commerce.edu;
URL: http://etsuodt.tamu-commerce.edu/coas/math/FACULTY/SIRAKOV/

Education: (degrees, dates, universities)
Ph.D. degree: 1988-1991; Center of Mathematics, Comp. Science & Mechanics-Bulgarian Academy of Sciences (BAS); in the field of Pattern Recognition-Title: 3D objects recognition by help of regularities, order and set of identification. Defended in 1991. The work was developed under international project dedicated to develop a robot system capable of nuclear reactors inspection.

Master degree-1982-1983; Sofia University (SU)- School of Mathematics & Computer Science, in the field of Coding Theory, Title: New examples of (15,11) systematical, non-vasiliev’s, non-linear, perfect codes correcting one error, defended 1983.

B.S - 1978-1982, Sofia University (SU) “KI. Ohridsky”- School of Mathematics & Computer Science, the top Math and Informatics Dept. in the country.

In the army: September 1976 – October 1978.

Bulgarian National High School of Math and Informatics “Lubomir Chakalov”, 1973-1976, the top High School in the country.

Career/Employment: (employers, positions and dates)
Texas A&M University Commerce, Dept CSIS, Dept of Math– Associate Prof. 2010-present; Assistant Prof. 2004-2010
Institute of Mechanics and Biomechanics- BAS - Associate Professor 1999 –2001;
Instituto Superior Tecnico, Lisbon, Portugal- Senior Researcher, Invited Professor 1998-1999, 2000
Scientific Chair of Biomechanics and Telemanipulators Lab. 1996-1998;
Transport University - Invited Associated Professor 1995-1997;
Institute of Mechanics – BAS - Research Fellow I degree (RF I), 1992-1999;
Int. Lab of Artificial Intelligence – Slovak Academy of Sciences - RF I 1991
Technical University Sofia - Invited Assistant Professor 1988-1990;

Teaching Experience And Service
RECORD OF COURSES TAUGHT: Math and Computer Science
US EXPERIENCE, 2001-Present:
☒ Texas A&M University Commerce


Lectures:

Lectures:

Fall 2012
Dept. CSIS-CSCI516 Fund Concepts Computing/Mach Organization –Graduate course,
CSCI518 Thesis, 1 student- Pravin Kandhare, Title: Tracking objects in video

Dept of Math – Math-597/ CSCI546 Numerical Analysis – 6 students, new course
Math 317 – Numerical Analysis- 18 students

Summer II 2012, Comprehensive Exam
Dept. of Mathematics- Math 314, Calculus III, - 18 students ;
Math589 – Independent Study, Pravin Kandhare, Title: Advanced Image Analysis with Elements of Recognition;
Math489 – Rebecca Stewart, Title: Optimal Path Detection in Graphs
CSCI589- Independent Study, Sheena Mathew - Title: Experimental Validation of Integral Scaling Algorithms.

Spring 2012: Comprehensive Exam, for Mtah563
Dept. CSIS-CSCI-516 Fund Concepts Computing/Mach Organization – Graduate course, 24 students
CSCI518 Thesis, 1 student- Pravin Kandhare, Title: Tracking objects in video sequences
CSCI589 – Independent Study, Sheena Mathew, Title: Radial Integral Technique for Scale Invariant Image Region Matching.

Math589 – Independent Study, Pravin Kandhare, Title: Image Analysis Methods
Math595 - Project, Raghu Manur, Title: Software for Image Splitting using Delaunay Triangulation, we met on Feb. 03, 2012, I developed the method for him, provided John’s Report, and the software by Frigo in C++. This software differs from what is required in the image tessellation.

Dept of Math – Math-331 Discrete mathematics, 35 students,
Image Processing with applications – CSCI567-1 students; Math563- 5, Math489 - 7 students
Development of new course CSCI546 Numerical Analysis, Math546

Fall 2011
Dept CSIS-CSCI516 Fund Concepts Computing/Mach Organization – Graduate course, 32
CSCI595 1 Student – Automatic Skin Lesions Features Extraction with S-ACES active contour.

Dept of Math – Math-314 Calculus III–Upper Level-course, 35 students,
Math 317 – Numerical Analysis-Upper Level - 13 students, Undergraduate.

Math589-Indipendant Study – 2 Master Students, Title: Integrals on Radial Lines for Scaling Invariant Regions Matching: Title: Delaunay Triangulations and Voronoi Diagrams for splitting and merging images.

Summer I, 2011- Calculus III, Math 314 – 9 students;
Thesis Chakrader Nara, Title: Active contour on the exact solution of the active convex Hull Model Working with noise, published; Math 589 – Sheena Mathew, Title: Circular and Radial Techniques for Rotational and Scale Invariant Regions Matching;

Spring 2011:
Dept CSIS-CSCI-516 Fund Concepts Computing/Mach Organization – Graduate course, section 1 - 46, section 2- 39 students;
CSCI518 Thesis, 1 student- Chakrader Nara, Title: Active contour on the Exact solution of the active convex Hull Model Working with noise

Dept of Math – Math-335 Linear Algebra, 32 students,
Image Processing with applications – CSCI567-5 students; Math563- 2, Math489 - 4 students

Fall 2010
Dept CSIS-CSCI-516 Fund Concepts Computing/Mach Organization – Graduate course, section 1 - 28, section 2- 18 students, the latest edition of the text buck is used;
CSCI595 Research & Literature – Graduate- 1 student
CSCI518 Thesis, 1 student- Chakrader Nara, Title:
*Dept of Math – Math-315 Differential Equations–Upper Level-course, 32 students,*
  *Math – Numerical Analysis–Upper Level - 13 students, Undergraduate.*
Math589-Indipendant Study – 1 Master Student, Title: Scaling, Rotation and Translation Invariant Region Matching Methods.

**Summer 2010**
Dept. of Mathematics- Math 314, Calculus III, - 15 students;
  Math589-Indipendant Study – 1 Master Student, Title: Correlation and Shape Matching Methodology;

**Spring 2010:** Comprehensive Exam, April 15, for CS-

**Spring 2010**
Dept. of Mathematics- Math 314, Calculus III – 6 students;
  *Dept CSIS-CSCI-516* Fund Concepts Computing/Mach Organization –Graduate course, section 1 - 40, section 2-28 students, the latest edition of the text buck is used;
  Master Thesis- Karthik Ushkala- Tracking Objects-1 Graduate student;

**Fall 2009:** Comprehensive Exam, October 2009, for Math- 1 master students.
Dept. of Mathematics- Math 315, Differential Equations - 35 students;
  *Dept CSIS-CSCI-516* Fund Concepts Computing/Mach Organization –Graduate course, section 1 - 25, section 2-22 students, the latest edition of the text buck is used;
  CSCI589- Image Segmentation and Analysis, 1 Graduate student;
  CSCI595- 3 projects for 3 graduate students.

**Summer 2009**
Comprehensive Exam, June 2009, for Math- 2 master students.
Dept. of Math- Math 314, Calc III, - 16 students; Math589-Indipendant Study – 1 Master Student;

**SPRING 2009**
  *Dept CSIS-CSCI-516* Fund Concepts Computing/Mach Organization –Graduate course, section 1 - 36, section 2-26 students, the latest edition of the text buck is used;
  CSCI-567 Image Processing w/Applications -Grad-course, 12 student;
  CSCI489-Imame Processing with Applications Hours: 1-4, 1 Undergraduate

*Dept of Math – Math-563* Image Processing w/Applications–Grad-course, 05 students,
  Math 489-Introduction to Partial Diff Equation Hours: 1-4, 1 Undergraduate.

**FALL 2008:**
Comprehensive Grad Exam CS – around 50 students;
  *Dept CSIS-CSCI-516* Fund Concepts Computing/Mach Organization –Graduate course, section 1 - 46, section 2-40 students, the latest edition of the text buck is used;
  CSCI532, Algorithms Design- 28, +7 extra, graduate students; CSCI595- 9 students;

*Dept of Math – Math-191 –Calc. I- 25 students, Bin 302;

**SUMMER II 2008:**
Continuation of Math 589.

SUMMER I 2008:
Dept CSIS-CSCI532- 35 graduate students, Session I;
Dept Math-Math314-Calculus III- 17 students Session I:
Math 589- Title: Search optimization in image database, Session I and Session II-one student Shrinivas Komu, 50001262, CS graduate

SPRING 2008:
Dept CSIS-CSCI-516 Fund Concepts Computing/Mach Organization –Graduate course, section 001, 21633-37 students, Jour 129;
CSCI-567 Image Processing w/Applications -Grad-course, 16 students;
Dept of Math – Math-192 –Calc. II.- 40 students;
Math-563 Image Processing w/Applications-Grad-course, 22 students, the latest edition of the text buck is used.

FALL 2007:
Comprehensive Exam CS – 14 students; Comprehensive Exam Math- 5 students.
Dept CSCI-CSCI-516 Fund Concepts Computing/Mach Organization –Graduate course, Spring-2007, section 001, 81695-32 students; section 002, 82599 -29 students;
CSCI595 Research & Literature, Graduate Course– 5 students.
Dept of Math – Math-142 Pre-Calc, Spring 2007- 26 students, BA 257:

SUMMER I, 2007:
Dept CSCI Algorithms Design, CSCI532 – Graduate Course, 16 Students, Jour 104
Algorithms Design, CSCI489 – Undergraduate, 1 Student

SPRING 2007:
Dept CSIS-CSCI-516 Fund Concepts Computing/Mach Organization –Graduate course, Spring-2007, section 001, 21633-34 students, 3-4:15PM, Jour 129; section 002, 22074 -35 students, 12:30PM-1:45PM, Jour 129;
CSCI-597 Image Processing w/Applications -Grad-course, Spring 2007 – 3 student;
Dept of Math – Math-142 Pre-Calc, Spring 2007- 41 students, Bin 301, 11-12:15PM;
Math-597 Image Processing w/Applications–Grad-course, Spring 2007- 7 students, Science 123, 7:20-10PM;
Math-489 Image Processing w/Applications – Under Grad-Spring 2007 – 1 student;

FALL 2006:
Dept CSIS-CSCI-516 Fund Concepts Computing/Mach Organization –Graduate course, two section 42 students each, total 84 students;
CSCI-595 Research Lit & Techniques – 13 student;

SPRING 2006:
Dept CSIS-CSCI-516 Fund Concepts Computing/Mach Organization –Graduate course, Spring-2006-33 students;
CSCI322 Computer Organization – 9 students;
CSCI-597 Image Processing w/Applications -Grad-course, Spring 2006 – 6 student;
Dept of Math – Math-191 Calc I, Spring 2006- 27 students;
Math-597 Image Processing w/Applications –Grad-course, Spring 2006- 8 students;
Math-489 Image Processing w/Applications – Under Grad-Spring 2006 – 1 student;

FALL 2005:

- Dept CSIS-CSCI-516 Fund Concepts Computing/Mach Org –Grad-course, TWO SECTIONS 32 students each, Total 64;
- Dept CSIS - CSCI-595 Research Lit & Techniques – Fall2004-Fall 2005, 10 students;
- Dept of Math – Math-315 Differential Equations, Upper Level Under Grad; 31 students;
- Math-142 Pre-calculus, 34 students;

SUMMER 2005: Math 335, Linear Algebra, 12 students.

SPRING 2005:

- Dept CSIS-CSCI-516 Fund Concepts Computing/Mach Org; 39 students;
- Dept of Math – Math-191 Calc I, 27 students;
- CSCI-597, Math-489, Math-597 Image Processing w/Applications; 15 students.


Northern Arizona University – Dep. Math & Statistics:

- Summer 2004-Fall 2001 – Finite Math, Differential Equations and Numerical Methods, Calculus– total around 88 credit hours;
- The students’ written evaluations, of my teaching techniques, are above average for Northern Arizona University;

European Experience, in Computer Science:

- School of Mathematics and Computer Science, Sofia University, graduate students, spring 2001:
  - Modeling, Reconstruction, Visualization and Manipulation of 2D/3D objects;
  - Introduction to 3D modeling and visualization technology-C++ implementation.
- Institute of Mechanics (IM)- Bulgarian Academy of Sciences (BAS), Graduate Students-1995-1998:
  2D/3D objects description, modeling, reconstruction and visualization – C++ implementation;
  2D/3D Computer graphics; Image Processing; Pattern recognition; Coding Theory; Microcomputers and assembler language.

In Applied Math

- Transport University Sofia, Dep. of Math and CS, Undergraduate students - 1995 –1997:
  Computational geometry; Numerical methods and linear programming.

Technical University Sofia, Department of Applied Math, Undergraduate students, 1987-1990:
Discrete math; Numerical Methods- implementation by FORTRAN; Introduction to Optimization Techniques.

SUPERVISING UNDERGRADUATE STUDENTS’ RESEARCH IN THE US:

NSF-REU program Dept. Chemistry June 04,2007-August 10,2007- one student researcher Reubin Hinman, Project “Enhancement and Features Extraction from Surface Images.”, 3 seminars, during the program, one final presentation.

1. Rohan Narain, Undergrad student CS Dept, Project: Content Based Image Retrieval Systems. 3D objects reconstruction and visualization, Spring 2005, Spring 2008. Title: Features used in 3D indexing and retrieval;
   - Given on Campus poster presentation -Students Research Symposium 10.22.05;
   - Given presentation for the Pathway Young Research meeting in Kingsville-November 03-05.2005;
   - A poster presentation for the Pathway Undergraduate Symposium – Prairie View Texas A&M Univ, Nov 10-11,2006, Best CS presentation award;
   - A poster presentation on the Pathway symposium, Nov. 03,2007;
- Presentation to the TAMUC Annual Research Symposium 2008, Thursday April 24, 2008; Title: Image semantics for indexing of large image databases. **Best undergraduate presentation –award;**

2. Will Harrell, Undergraduate student CS Dept, Title: 3D visualization from 2D cross sections, **Fall 2007.**

3. Bohannon, Derek, Undergraduate student CS Dept, an introduction to 3D visualization, September, **October 2006;**

4. Minh Tang (SID-342-65-988), Undergraduate student CS Department, **Project:** continuation of coding the Convex Hull algorithm to Image Database Indexing, C++ , Fall 2005, **Spring 2006;**

5. **Nathaniel Rowland-** Undergrad student CS Dept, C++ tool to implement a new Convex Hull Model based on the Geometric Heat Differential Equation, **funded by the Dean of College of Arts and Science under Undergraduate Student Research initiative, Spring 2005.** The submitted report was highly evaluated by the Dean of Arts and Science;

6. Mr. Christopher Rex- Boundary support and its applications, **funded by the Dean of College of Arts and Science under Undergraduate Student Research initiative, Fall 2004.**

**SUPERVISING GRADUATE RESEARCH:**

1. **Pravin Kandhare** – Dept. of Computer Science – Tracking Objects in a Video, **Master Thesis work , Since Fall 2011.**

2. **Melendez, John M. -** Grad Student Dept. Math.- **Title:** Image Segmentation Using Delaunay Triangulation with a Predicate, Preparing a presentation for the Texas meeting of the Mathematical Association of America, April 2012.

3. **Sheena Mathew** – Dept. of CS. Region Matching of Objects using Scaling and Rotational Invariant Methods, Participation at the TAMUC Res. Sym.-April, TAMU-Pathway, 11, **2011.**

4. **Surendra Chakrader Nara –** Dept CS, Image Enhancement, Active Contours evolving on noise images, **Awards : 2nd place Annual Research Symposium Texas A&M Commerce; 8th Annual Texas A&M University-System Pathways Research Symposium, West Texas A&M University, October 22-23,2010, Master’s Level, 2nd Place, CS, Title: Enhancement of Skin Lesion Images to Remove Noise. Defended Master Thesis 2010-Fall 2011,**

5. **Srikanth Sriram** – Skin Lesions Features Extraction, and masks generation. **2011.**

6. **Jandhyam, Venkata N. –** Dept. CS, Matching Image Regions, Image Correlation, **2010, Awards: 8th Annual Texas A&M University-System Pathways Research Symposium, West Texas A&M University, October 22-23,2010, Overall Winner, Master's Level, 2nd Place & 1st Place Winner Mathematics Discipline, Title: Correlation and Shape Matching Methods;**

7. **Karthik Ushkala,** Dept. CS, Image Segmentation and Analysis, Coding in Java the Active Convex Hull Model based on the exact solution of the Heat Differential Equation, Active Contours, **Fall 2008-Spring 2010;**

8. **Santhus Karapathy** – Dept. of CS, Knowledge extraction from Image Databases, **Fall 2008-Fall2009;**

9. **Prathat Pollisetty:** - Dept. of CS, Completed and optimized the Java code of the Active Convex hull Model, Fall 2008;

10. **Kommu, Shrinivas 50001262 –** Web search and engines, for Content Based Image Retrieval. Google achievements, Spring-Summer 2007, 2D/3D Indexing **Fall2007, Spring Summer 2008;**

11. **Jason Moore, 10056344, Graduate Student-** Dept. of Mathematics, Gradient Methods to Image Enhancement, **Spring 2007;**

12. **Shah, Divyesh R., 40475793, Graduate Student –** Computer Science, **Project:** Data fusion in intelligent systems, Web Archives, DICOM image formats, **Spring 2007;**

13. **Archana Chada , 50001103, Graduate Student –** Computer Science, **Project:** C++ coding of a new active convex hull model, **Spring 2007;**
14. Sudheer Musini – Graduate Student CS Department– in the development of the NSF-CAREER proposal, summer 2006;


PROJECTS: http://odin.math.nau.edu/reuprojects.html

Title: 3D Edge Detection and Visualization based on the Geometric Heat Equation, 2004, the work was funded for presentation on the Young Mathematicians Conference, Ohio State University, August 19-22, 2004;
Title: A Method for Rapid Edge Detection and Image Segmentation, 2004;
Title: An Application of Differential Equations to Image Processing, together Catherin Lichten McGill University, 2003;
Title: Objects Detection in an Image Database Using Shape Features, together with Andrey Kislaauk, University of California Berkley.

Supervising Master and Ph.D. students in Europe:
- 3D visualization of bioorganic structures, School of Math and CS-SU, Summer 2002.
- 2D/3D visualization of multiple subsurface objects – modeling and interpolation, Image Analysis LAB (IAL) of CVRM-Instituto Superior Tecnico (IST)–Lisbon, Portugal, 1998-2000;
- 3D visualization. Shape from shading. IM-BAS, Technical University (TU) Sofia, Image Processing and Recognition Lab (IPRL), 1998;
- Image Processing – objects partitioning, edge detection, image enhancement, IM-BAS and School of Math and CS –Sofia University, 1996-1998;
- 2D/3D visualization, modeling and reconstruction, IM–BAS and FMI-SU, 1996-1998;

DEPARTMENTAL SERVICE:
US EXPERIENCE, 2001- Present:

TAMUC-2004 present
✓ Joint-TAMUC-TUS- Comp. Sci. Master Program Development Fall 2012;
✓ Memorandum for Cooperation between TAMUC & Technical University Sofia (TUS)- 2012.
✓ Faculty Search Committee Dept. of Mathematics, Dept. of Literature & Languages, 2012;
✓ Tenure and Promotion Committee CoSEA. Since Fall 2011, Chair since Fall 2012.
✓ Defense committee for Math595 project, Aida, August 01, 2012;
✓ Dean of COSEA Search Committee, since April 20, 2011 from Math Dept;
✓ Task Committee for development of a Ph.D. Program in Comp Sci.–2009.
✓ CS Dept. Assessment Team – October 02, 2009-present;
✓ Development Committee of the new CS- Professional Science Master’s degree in Computational Science – February 19, 2009, May 2009, weekly meetings;
✓ Judge for the Pathway students and Young Faculty presentation contest November 7-8, 2008;
✓ Graduate School Representative at the Ph.D. defense of Nr. Campanaro, Oct. 28, 2008;
✓ Work with Dr. Kremisnki on enrolment of Bulgarian graduate student at Dept of Mathematics, Spring, Summer, Fall 2008;
✓ Work on the undergraduate program pamphlet of the CS Dept- November 2008.
✓ Advisory Committee of Caleb Grisham for his Math595 report- August 01, 2008;
✓ Advisory Committee of Katsuhiro Iwao for his Math595 report- August 07, 2008;
✓ Ad hoc Committee recruiting International students, Fall 2007.
✓ Curriculum Committee – Computer Science Department;
✓ Undergraduate Research Committee- Department of Mathematics, 2006-2007;
Committee which initiated and ran TAMUC- 2005 Undergrad Summer Research Program.
✓ Proctor of the TMSCA content, January 29, 2005.

Development of a graduate course “Image Processing with Applications”, Dept of Math/CS-TAMU Commerce, Fall 2004-2005;
Undergraduate Research Development Committee- since Fall 2004-Spring 2005;
University Initiative Committee for development of Summer 2005 Undergraduate Research program- Fall 2004-Summer 2005.

NAU-2001-2004
Member of Discreet Math Textbook Selection Committee, Dept. Math and Stat, NAU, 2003;
Co-chair of the Modeling Team, Dept. Math and Stat, Northern Arizona University, 2001- 2004;
European Experience:
Program Development Committee of Robotic and Biomedical Engineering Dep. - Southwest University, Blagoevgrad, Bulgaria, 1994.

RECORD OF SEMINARS and INVITED LECTURES-IN THE US, 2001-PRESENT:

Professional Meetings and Conferences 2005 - present:
Title: Weapon Ontology Annotation Using Boundary Describing Sequences, IEEE SSIAI, Santa Fe, New Mexico, April 22-24, 2012
Title: Integration of Low Level and Ontology Derived Features For Automatic Weapon Recognition and Identification. SPIE Defense, Security, and Sensing-Automatic Target Recognition XXI, 25 - 29 April 2011, Orlando, Florida,
Title: Automatic Object Identification Using Visual Low Level Feature Extraction and Ontological Knowledge, SDPS’2009- Society for Design and Process Science, Dallas, Texas, June 09, 5PM.
Title: Tracking Neutrophil Cells by Active Contours with Coherence and Boundary Improvement Filter, IEEE SSIAI2010, Austin, Texas, May 24, 2010.
Title: An Active Vector Field for Boundary Extraction of Objects with Complex Geometric, SPPRA 2010, Austria, Innsbruck, Friday, February 19, 2010.
Title: An Integral Active Contour Model for Convex Hull and Boundary Extraction, International symposium on Visual Computing, Las Vegas, Nov. 30-Dec. 02, 2009.
Title: Shape’s Related 3D Objects Indexing and Image Database Organization, IEEE Southwest Symposium on Image Analysis and Interpretation, Santa Fe, New Mexico, March 25, 2008.
Title: Multiple Surfaces Reconstruction from 2D Sections Using an Increasing 2D Vector Flow, The 2006 World Congress in Computer Science Computer Engineering, and Applied Computing, Las Vegas, June 26-29,2006
Title: A New Active Convex Hull Model for Image Database’s Search Space Partitioning, 2005 World Congress in Applied Computing - VISION’05, Las Vegas, June 20-23, 2005.

Given Seminar Talks, 2004- present
Title: About Visit Experience and Ideas on Identification, Matching and Tracking, Mathematical Colloquia Dept. of Mathematics, Nov. 30, 2011, 3:30PM-4:30PM.
Title: Mathematical Concepts with Image Analysis Applications, Mathematical Colloquia Dept. of Mathematics, Nov. 30, 2011, 3:30PM-4:30PM.
Title: New Family of Active Contours with Image Enhancement & Region Matching, Math Department Colloquium, TAMUC, Nov. 23, 2010, 3:30PM-4:30PM.
Invited Seminar at UT Arlington, Applied Mathematics Seminar-Department of Mathematics at UT Arlington, March 06, 2009, 2:30, Pickard Hall, Room304, Title: The Exact Solution of the Active Convex Hull Model And Its Application to Image Segmentation, attended by both Math and CS Faculty, Ph.D. and Master Students.
Title: The Active Convex Hull Model Its Level Set Presentation and Exact Solution. Math Colloquium on November 13, 2008, 3PM-4PM;
REU seminar on June 06, 2007, Title: Enhancement and Features Extraction from Surface Images.
Title: Level Set Formulation of the Heat Differential Equation, Applications to Content Based Image Retrieval, Dept of Mathematics and CS, Jour 129, May 05,2006, 12-1:30PM.
Title: Introduction to Mathematica, and its Applications; An Application of Derivatives and Interpolation to 2D and 3D objects modeling, Image Evaluation and Retrieval; TAMUC, Undergraduate Research Program, June 07-08,2005.
Title: A New Image-Region’s Active Convex Hull Model For Content Based Image Retrieval, TAMU-Commerce, Dept Math and Dept of CSIS, Sept. 30.2004.

NAU, 2001-2004
Title: Heat Equation and Gradient Flow to Capture an Image Object in a Dynamic Image Database. NAU- Department of Math and Statistics, Regular Seminar, USA, 04/02/2003.
Title: Shape matching of words in Digitized Renaissance Books. Smooth Reconstruction and Visualization of Multiple 3D Objects in Case of Shortage Input Data. Computer Science Dept.- Eastern Michigan University, USA, 04/01/2002.
Title: Surfaces Construction Using Regularities and Sequences of Observation. Northern Arizona University- Department of Math and Statistics, Regular Seminar, USA, 03/19/2002.
Title: Over optimal surface reconstruction methods, Applied Math Seminar, Department of Mathematics and Statistics- Northern Arizona University, USA, 01/23/2002.

In Europe:


Title: Over some problems of Image to Text/Text to Image transfer system, the Group of Prof. Dr. Liming Chen- Ecole Central de Lyon, software developing Company –SGBI- Lyon, France, June 1999.


Title: Regularities and finite numerical sequences to 3D objects representation, shape reconstruction and visualization, *CIMPA Institute “Virtual Reality”- Nice, France* – June 1995.


Title: 3D Objects Recognition Method to Robot Orientation and Control in Nuclear Reactors, *CVRM-IST, Lisbon, Portugal*, October 1993.

Title: Recognition of shape from finite series of plane figures. *NATO Advanced Study Institute “Shape in Pictures”, Driebergen, the Netherlands*, 1992.

Title: Application of regular structures and identification sets to 3D objects recognition in robotics, *International Lab of Artificial Intelligence- Slovak Academy of Sciences- Bratislava, October 1990*.

Title: Application of FORTH language to robot’s local motion control; Title: An aspect graph based effective approach for 3D objects and scenes description to robot orientation in a global scene. *Polish Academy of Sciences-Institute of Biocybernetics and Bioengineering, 1987-1989*.

**PRESENT RESEARCH ACHIEVEMENTS in:**
- Convex Active Contours – 2012 present;
- Automatic skin lesion features extraction and identification- 2010 – present;
- Ontology generation and indexing for automatic weapons identification from single image, since Fall 2009-present;
- Tracking objects in video sequences- 2009-present;
- Emotions recognition through facial features, started Fall 2008;
- Steganography- hiding images, started Fall 2007;
- 2D/3D active contour models- Image Processing and Analysis;
- Content Based Image Retrieval –in 2D and 3D;
- Features extraction, and indexing in 2D and 3D;
- Scientific Visualization and reconstruction - 2D/3D objects modeling and interpolation;
- Image processing;
- Digital and Multimedia Libraries;
- Computer Vision; Pattern recognition;
- Robot control and vision.

**Fields of application:** Bio-medical Imaging, Internet, Robotics, Natural Resources.

**NAU Dept of Mathematics and Statistics annual review committee evaluated my research for 2001-2002 academic year with max grade 4 out of 4; 2002-2003 academic year with 3.95 out of 4.**

**FELLOWSHIPS AND GRANTS:**
- Competitive Travel Grant by Faculty Development Committee, TAMUC, 05, 06, 07, 08, 09,11.
The undergraduate research I did was granted and funded for presentation by the Org Committee of the Young Mathematicians Conference, Ohio State University, August 19-22.2004.

Invited Professor at CVRM-IST, under European Community Project DEBORA, fall of 2000;

NATO Senior Research Fellow at IAL of CVRM-IST, Lisbon, Portugal, Title: Morphological and recognition techniques to geometrical modeling and visualization of multiple complex 3D objects, 1999;

NATO Senior Research Fellow, at IAL-CVRM- IST, Lisbon, Portugal, Title: Image Analysis and Visualization to Quality, Environment and Natural Resources Control, 1998;


Visiting Assistant, Technical University of Dresden – Institute of Acoustics- fall 1997, DFG program;

Visiting Lecturer, CIMPA Summer Institute “Virtual Reality”, Nice - France – 1995;

Research Fellow under European Community - PECO, CVRM- IST, Lisbon, Portugal, Title: Application of Pattern Recognition to Material Reconstruction and Defectology, 1993- 1994;


Research Fellow at the International Laboratory of Artificial Intelligence- Slovak Academy of Sciences- Bratislava, Slovakia, end of 1990-1991;

The paper “Automatic Reconstruction of 3D Branching Objects” was granted as the best one developed at IM-BAS, 1996.

REVIEWER OF PAPERS: IN THE US, 2002- Present

Journals:

- Pattern Analysis & Applications Journal, Published by Springer Verlag, since 2007, Impact Factor 1.367, Journal Citation Reports®, Thomson Reuters,
- IEEE Transactions on Image Processing, one of the top journals in the field of Image Processing- Impact Factor 2.8, 2004-2007;
- IEEE Trans on Signal Processing, one of the top journals in the field of Signal Processing, Impact Factor 2.35, 2005;

Conferences:

- IEEE International Conference on Acoustics Speech and Signal Processing, April 2009, Taipei Taiwan, October-November 2009;
- Signal Processing, Pattern Recognition and Applications (SPPRA), since 2008-present.
- The IEEE International Conference on Image Processing, ICPR, world wide top conferences in the field, rate of acceptance between 33% and 43%, since 2006, present;

In Europe:

The VII Congress of Theoretical and Applied Mechanics, Sofia, Bulgaria, September 1993;


REVIEWER OF RESEARCH PROJECTS PROPOSALS (dealing with image processing, 3D objects modeling and visualization) for Natural Environmental Research Council, Polaris House, North Star Avenue, Swindon SN2 1EU, United Kingdom. 2001.

PUBLICATIONS:
Total number of papers: above ninety;
# of papers in reviewed journals, chapter of books, confer.: above sixty five;
Books: two.

CITATIONS: above 150. List of selected citations:

- IEEE Xplore – 12 paper are in the server (years: 2011-2004, 1997);
- Microsoft Academic/ Microsoft Research: included 24 papers, CITED by 100 authors, G-Index-7, H-Index-4.  
  [http://academic.research.microsoft.com/Author/368409/nikolay-metodiev-sirakov]
- DBLP Bibliography Server – 12 of my papers are listed in the server, Germany, Impact 1.21 out of max 3.31; in the top 15.56% sources (Journals, Conferences, Databases) with impact of publication venues in Computer Science - May 2003 (CiteSeer - [http://citeseer.ist.psu.edu/impact.html]), The server is listed as #190 out of 1221;

Selected Citations:
- Diagnosis of drug-induced skin reactions: a future role for computer-aided systems?  
  GJ Burbach… - Current Opinion in Allergy and Clinical …, 2011 - journals.lww.com


Fuzzy skeleton by influence zones—Application to interpolation between fuzzy sets


Catherine Lichten (McGill University), An Application of the Heat Diff. Eq. to Rapid Edge Detection, NSF sponsored REU, Northern Arizona Univ., report 2003, two paper are cited;

Andrey Kislyuk (University of California, Berkeley), Shape Matching In Image Databases, NSF sponsored REU, Northern Arizona University, report 2003, two paper are cited;


FOUNDER OF VIRTUAL RESEARCH GROUP:
I have founded this group in 2002 to deal with practical problems solution. Under my leadership and working through Internet this group developed an approach and tool to volume calculation of subsurface objects and minerals. Using the obtained results we published two papers in the proceedings of International and US conferences.

1. Dan Hack-HalsteadGeo Inc, Portland - Oregon, USA, HalsteadGeo@aol.com;
2. Dr. Marcin Iwanowski - Warsaw Univ. of Technology, Poland, iwanowski@isep.pw.edu.pl;
3. Rumen Mironov, Technical University Sofia, IPRL, Bulgaria, rpm@vmi.bgcict.acad.bg.

MEMBERBERSHIP IN PROFESSIONAL SOCIETIES:
IN THE US:
- IEEE member, 2003-present.
- Mathematical Association of America-2006-present.

International:
- Spatial Data Laboratory Network – Coordinator Prof. Chung Chang-Jo- Spatial Data Analysis Laboratory, Geological Survey of Canada, Ottawa, Canada, since 1998;
- Scientific Council of Bulgarian Association of Pattern Recognition-member of IAPR, since 1994;
- Bulgarian Association of Robotics, since 1987;
- Union of Bulgarian Mathematicians, since 1985.

EDITORIAL BOARD of the Journal of WSCG [ISSN 1213-6972], invited October 2007.

SCIENTIFIC/PROGRAM COMMITTEES: IN THE US: 2001-PRESENT:
Member of the Program Organizing Committee of:

- IWCIA2012 – 15 Workshop on Combinatorial Image Analysis- Member of the Program Committee- Publication by Lecture Notes in Computer Science – Springer Verlag, Nov. 2012.
- Chairman Documentation Committee – SPDS2011, Seoul, South Korea, June, 2011.
- IASTED- Int. Conf. on Signal Processing, Pattern Rec, and Appl. (SPPRA), since 2008 present;
- IEEE Int. Symposium on Signal Processing and Information Technology, since 2008 present;
- Technical Program Committee – IEEE International Conference on Image Processing (ICIP), top one in the field, since 2006 present.
- Technical Program Committee – IEEE International Conference on Image Processing, top one in the field, since 2006-present;
- The 2005 International Conference on Modeling, Simulation and Visualization Methods- MSV’05, World Congress of Applied Computing: June 27-30, 2005, USA;
- The 2005 International Conference on Computer Vision - VISION’05: World Congress of Applied Computing: June 27-30, 2005, USA;
- the International Conference on Computer Graphics, Visualization and Computer Vision, WSCG, in co-operation with EUROGRAPHICS, since 2002-present;

In Europe:
- Member of the Scientific Committee of 5th Ibero-American Symposium on Pattern Recognition - SIARP2000, Lisbon, Portugal, September 11-13, 2000;
- Member of the Program Committee of the 7th Congress of Theoretical and Applied Mechanics (CTAM), Sofia, Bulgaria, September 1993;
- Member of the Organizing Committee of the 6th CTAM, Druzba-Varna, Bulgaria, September 1989.

Chair of sessions - International Conferences:
- IASTED- International Conference on Signal Processing, Pattern Recognition, and Applications (SPPRA), Austria, Innsbruck 2010;

  Session: APPLICATIONS IN MEDICAL IMAGING, the 2006 World Congress in Computer Science Computer Engineering, and Applied Comp, June 25-28, 2006, Las Vegas;
  Session: LOW- & HIGH-LEVEL SEGMENTATION + CLASSIFICATION + DETECTION, 2005 World Congress in Applied Computing - VISION'05, Las Vegas, June 20-23, 2005;

RECORD OF RESEARCH PROJECTS:

Image Data Base Queering and Features Extraction: IN THE US, 2002-Present:

- Dr. M. Luong, Convex Active Contours, skin lesion features extraction, University Paris 13, since 2011-present.
- Automatic skin cancer identification – collaboration with Dr. Mete, 2009, Dr. Ou, Dr. Selvaggi MD-2011, present.
- Integrating geometric and ontology knowledge for Weapons recognition- collaboration with Dr. Attardo 2008 present, Dr. Suh, 2009, Dr. Arslan -2011-present.
- Invariant Matching of objects using boundary geometric information, collaboration with Dr. Arslan, since 2009.
Tracking neutrophil in video sequences - **2009 present.**

- Matching objects boundaries – **collaboration with Dr. Arslan, 2009 present;**
- New active convex hull model on the exact solution of the geometric heat diff. eq., **2008.**
- Image Database indexing in 2D and 3D, TAMUC, 2007-present;
- Automatic concavities extraction of image regions, joint research with Dr. Italo Simonelli, Dept of Math-TAMUC, Fall 2005-Spring 2006;
- Intelligent Image Database Mining Systems, Dr. Sang Suh, Dept of CS-TAMUC, 2005;
- Active regions – an approach to combine level sets with statistics, joint survey and research with Dr. Italo Simonelli, Dept of Math-TAMUC, Fall 2004-Spring 2005.
- An application of Image Processing to segmentation of Chemical Images, a joint survey with Dr. Ben Jang, Dept. of Chemistry, Spring 2005.
- Image object’s motion interpolation, joint survey and study with Dr. Hasan Coskun, Dept of Math-TAMUC, Fall 2004.
- A new convex hull model for image regions. An application to image database mining for image features extraction, indexing and management. TAMU Commerce, Dept of Math, Dept of CSIS, with the help of Dr. Richard Kreminski, Fall 2004.
- Variational methods to 3D objects detection and visualization, Joint research with Assoc. Prof. John Nueberger, Math & Stat Dept., NAU, USA, 2004
- Shape support, regularities and B-splines to image database querying. Joint research with Prof. James Swift, at Math & Stat Dept., Dr. Phillip Mlsna Elec. Eng. Dept. -NAU, USA.
- A new approach to increase accuracy of 2D sections interpolation. Joint research with Dr. M. Iwanowski, Warsaw University of Technology, Poland, R. Mironov, Technical Uni. Sofia.

**In Europe:**

**Visualization and reconstruction Projects: IN THE US, 2001-Present:**
- A new effective approach to volume calculation of 3D reconstructed subsurface objects. Under development together with HalsteadGeo Inc, Dr. Michel Fever Portland - Oregon, USA, Dr. Marcin Iwanowski - Warsaw University of Technology, Poland, 2002-Present.

**In Europe:**
- 2D/3D objects reconstruction and visualization using sparse data, at Image Analysis Lab (IAL) - C.V.R.M. -Instituto Superior Tecnico (IST), Lisbon, Portugal, 1999-2001;
- Multiple surfaces reconstruction and visualization, based on order and sequences of observation, at Institute of Mechanics (IM)-Bulgarian Academy of Sciences (BAS), Bulgaria, 2000;
- 3D reconstruction and visualization of multiple subsurface objects. Application to ore deposit and groundwater units reconstruction, at IAL-CVRM-IST, Portugal, 1998-1999;
- 3D visualization using gray level image. Shape from shading, together with Technical University (TU)- Sofia, Dept. of Telecommunications, Image Processing and Recognition Lab (IPR), Bulgaria, 1998.


Artificial Intelligence: Computer Vision and Decision Support Systems Projects:

- Dr. Benito Chen-Chanpentier, and Dr. H. Kojouharov, Dept. of Mathematics UT at Arlington, In the field of Math Modeling of Bacteria Destruction by White Blood Cells, since 2009.
- Facial features extraction and emotions recognition, joint research with Dr. Mariofana Milanova, CS Dep. University of Arkansas-Little Rock, Fall 2008.
- Matching 3D reconstructed objects, together with CVRM-IST–Lisbon Portugal, 2001;
- Shape matching of words in digitized Renaissance Books, together with IST-CVRM-Portugal, RFV- INSA, Lyon, France, 1999-2000;
- 2D objects recognition to multiple complex 3D objects reconstruction and visualization and Image processing, together with IAL-CVRM-IST, 1995-1999.
- 3D defects detection in mechanism components, IM-BAS, Bulgaria, CVRM-IST, Portugal, 1997;
- Definition of the new notion Morphological Similarity and its application to 2D objects recognition and partitioning, at IM-BAS, Bulgaria, 1996.
- 3D objects recognition by sets and order of identification, at IM-BAS, 1988-1990.
- Decision Support System to 3D defects detection, together with CVRM-IST, Portugal, 1995.

Digital Libraries Projects:

- Pages enhancements and segmentation to text and pictures, at CVRM-IST, Lisbon, Portugal, 2000.

Robots Vision and Control Projects:

- 3D objects modeling and recognition in Nuclear Reactors, together with Russian Academy of Sciences, Czech Academy of Sciences (CAS), BAS, Bulgarian Nuclear Power Station “Kozlodui”, 1987-1990.
- An optimal approach and software tool to robot’s local motions control, together with Russian Academy of Sciences. CAS, BAS, Bulgarian Nuclear Power Station “Kozlodui”, 1987-1990;
- 3D objects recognition to robot orientation in a global scene, together with Polish Academy of Sciences-Institute of Biocybernetics and Bioengineering, Warsaw, Poland, 1987-1989.

3D MODELLING, VISUALIZATION SOFTWARE TOOLS: 3D SORS, MatLab, Mathematica, SurfDrive.
SOFTWARE LANGUAGES: Assembler, C++, Fortran, FORT.

CHAIRPERSON OF SOFTWARE DESIGN AND DEVELOPMENT PROJECTS:

IN THE US, 2002-Present:

SUPERVISING SOFTWARE DESIGN AND DEVELOPMENT PROJECTS:

IN THE US, 2002-Present:
Active Contour for noise surpassing, - 2011,
Rotational invariant objects matching – 2011.
Expanding active contours for tracking – 2010.
Integral Active Contour Model, 2008- present, Java.
Active Convex Hull Model, on the approximation and exact solutions, Fall 2008, Java.
Image Database indexing. Spring, Summer 2008, VC++, C sharp;
Video compression, Iris Recognition, Matlab, Fall 2008;
Steganography – C++, 2007;
Corners detection for tracking objects- C++, 2007;
Shape to support transformation, C++, run under Windows/NT, NAU, 2003.

In Europe:
Matching 3D reconstructed subsurface objects. C++, 2000;
Filtering of 2D images. Run under DOS. Quick C. 1997;

DEVELOPED SOFTWARE TOOLS:
Capable of 3D objects recognition using stereo data. Motorola 6800, FORTH language, 86-89;
Capable of robot’s local motions control. Motorola 6800, Assembler language, 1987;
Capable of generating (15,11) systematical, non-vasiliev’s, non-linear, perfect codes correcting one error, Fortran, 1984.

PARTICIPATION IN FUNDED PROJECTS and GRANTS: IN THE US 2001-present:
Title: Delineation of Skin Cancer and Lesions by Filters Supported Active Contour, Research Enhancement Program, PI N.M. Sirakov, $14,533, 2010-2011.
Title: 3D Segmentation and Features Extraction for 3D Database Indexing, School of Graduate studies, Research Enhancement Grant, $ 5698, 2007-2008.
Title: Segmentation, Matching and Features Extraction for Content Based Image Retrieval, School of Graduate studies, Research Enhancement Grant, $4030, 2005-2006.
Title: The Faculty Development Committee has awarded me with a Competitive Travel Grant in the amount of $500, Spring 2005.
Title: Image segmentation for Content Based Image Retrieval. Mini Grant funded by Dean of Graduate Studies and Research, $520, November 16,2004-August 31,2005, completed.
Title: Boundary support and its applications - Mr. Christopher Rex (my student in Math 192), funded -$384 by the Dean of College of Arts and Science, Undergraduate Student Research initiative;

Title: An Application of Differential Equations to Image Retrieval and Visualization in 2D/3D, approved for funding by NSF-REU program-around $15,000, 2004.

Title: An Application of the Heat Differential Equations to Image Processing, funded by NSF-REU program-around $6000. Supervising the research of Catherine Lichten- McGill University, 2003. She was also funded to present our research on the Conference “Summer Undergraduate Research in Math”- August 2003, http://www.math.ohio-state.edu/conferences/surc/.

Title: Objects Detection in an Image Database Using Shape Features, funded by NSF-REU program-around $6000. Supervising the research of Andrey Kislyuk- UC Berkeley, 2003.

In Europe:

- Title: Digital Access to Books of the Renaissance, DEBORA, DGXIII/Telematics Program/LB-5608/A, 4th EU Framework, Participants: RFV-INS, Lyon, France, CS Dept - University of Lancaster-UK, CVRM-IST, Lisbon, Portugal, 1999-2001, funded – 1,000,000 EUROS.
- Title: Automatic Characterization of Ornamental rocks, COSS - 4th EU Framework, University of Bologna-Italy, University of Granada – Spain, Institute Superior Tecnico- Portugal, 1996-1998;
- Title: Development of manipulator and tools capable of Nuclear Reactors inspection, Project № 3.1.7, Czech Academy of Sciences, Russian Academy of Sciences, and Institute of Mechanics-Bulgarian Academy of Sciences. 1987-1990. Institute of Mechanics was funded around $1,000,000;

Submitted PROJECT PROPOSALS: In the US:

NIH-PAR-12-144-R03 - $135,000, Title: Active Contours’ Extracted Feature Vectors and Geometric Structures For Support Vector Machine Based Skin Cancer Diagnosis, PI Dr. N.M. Sirakov, Co-PI, Dr. M. Mete, Dr. Y. Ou, Consultants, R. Selvaggi, M.D., Dr. Luong, Ph.D. student Thieu.

NSF-China: Title: Image Segmentation by contours driven by a water pressure. PI, China, Wenjun Huang, Associate Professor, Guangxi University for Nationalities


NIH-R15-PA-10-070, $399,000, Title: Skin Cancer Identification Using Active Contours’ Extracted Features and Geometry of Manifolds, PI-Dr. N. M. Sirakov, Co-PI’s- Dr. M. Mete, Dr. Y. Ou, Consultant Dr. Karina Parr, Scott and White Memorial Hospital, Texas A&M Health Science Center, submitted, February 24, 2011. Revised after Review and resubmitted October 20, 2011.

NHARP - $147,000- Title: Mathematical and Computer Modeling of Neutrophils Destruction of Bacteria on Medical Implants, Collaborative grant proposal with Dept. of Mathematics, UT Arlington-PI Dr. Hristo Kojouharov, TAMUC-PI Dr. Nikolay Sirakov, approved for full proposal in a review panel with a rate of acceptance less than 25%, November 2009.

FEDERAL Initiative- $1,771,964-Title: Center for Patterns and Abstractions Discovery in Image Collections. Submitted October 01, 2009.

NEH ≈$250,000- Title: New Approaches to Digitizing Native American Archival Materials, Milanova Mariofanna - Project Director US – Associate Prof., Univ. of Arkansas at Little Rock, Parins James - Associate Director of the Sequoyah National Research Center, CO-PI-Little Rock Arkansas, Sarakov Nikolay - Assistant Professor, PI-Texas A&M University, Mehdi Qasim-Project Director UK - Professor of the University of Wolverhampton – UK, Kountchev Roumen – Professor- Consultant, Technical University of Sofia, Bulgaria. Submitted July 10, 2009.
NSF, CDI-Type II: Visual Attention Models for Image Exploration, In Collaboration with: PI Assoc. Prof. Mariofna Milanova, U of Arkansas at Little Rock, Derrick Tate, Assistant Professor, Mechanical Engineering Department, Texas Tech University, Ahmed Emam, Assistant Professor, Department of Computer Science, Western Kentucky University, Professor Qasim H. Mehdi, University of Wolverhampton, UK. Submitted on January 08, 2008,

NSF CAREER Proposal- CAREER- Title: 2D/3D Dynamic Image Database with Learning Visualization and Tracking, amount requested $482,540, Submitted on July 17,2007, Denied on November 19, 2007 after 6 reviews (3 good; 3 fair) by experts and 2 reviews by NSF panels;

NSF CAREER Proposal- CAREER- Title: Decisions Support-Content Based Image Retrieval System, DS-CBIR, amount requested $501,159, Submitted on July 2006;

Title: Intelligent Utilities for Brain Cancer’s Features Extraction from Image Database, amount requested $96 672, PI Dr. Sirakov, together with Dr. Ye-Lin Ou, submitted to the Advanced Research Program – Texas, 2007.

Title: Diagnosis Support-Content Based Image Retrieval System, DS-CBIR amount requested $97000, PI Dr. Sirakov, together with Dr. Simonelli, Dr. Creider, submitted to the Advanced Research Program – Texas, 2005.

Title: Automatic Objects Location and Tracking in Image Sequences, together with Dr. Simonelli, amount requested $26850, PI Dr. Sirakov, Fall 2005, submitted to L-3 Communication;

Title: 3D Objects Reconstruction and Visualization, amount requested $ 28 075, Fall 2005, submitted to L-3 Communication;

Title: Image Database management, features extraction to Content Based Image Retrieval, Dr. Simonelli, amount requested $26850;

Title: Summer Undergraduate Research Program-TAMUC, together with Dr. Allan Headley, Dr. Ken Ashley, Dr. Ben Jang, Fall 2004-Spring 2005, funded for Summer 2005.

In Europe:


Commerce, Texas
October 12, 2012