

Srujan Kotikela, PhD

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RESEARCH INTERESTS

Systems Security	Artificial Intelligence
Confidential Computing	Robust Machine Learning
Decentralized Privacy	Knowledge Representation and Reasoning

EDUCATION

Ph.D. in Computer Science and Engineering University of North Texas, Denton, TX Advisors: Krishna Kavi, Mahadevan Gomathisankaran	August 2018
Master of Science in Computer Science University of North Texas, Denton, TX Advisor: Mahadevan Gomathisankaran	December 2014
Bachelor of Technology in Computer Science and Engineering Jawaharlal Nehru Technological University, Hyderabad, India	May 2008

TEACHING

CSCI 233 Application Program Development	Fall 2020, Spring 2021
CSCI 303 Technical Communication for Computer Professionals	Spring 2020, Spring 2021
CSCI 324 Software Engineering	Spring 2021
CSCI 340 Introduction to Database	Fall 2019, Fall 2020
CSCI 380 Web Programming and Interface	Fall 2020
CSCI 415 GLB/Ethics, Law & Cybersecurity	Fall 2019, Fall 2020
CSCI 430 Introduction to Operating Systems	Spring 2020
CSCI 450 Computer Architecture	Spring 2021

WORK EXPERIENCE

Assistant Professor August 2019 - Present Developing and delivering Computer Science courses for junior and senior level classes. Participating in departmental and university committees as necessary. Conducting novel research in the areas of Computer Security, Cloud Computing, Internet Of Things, and Artificial Intelligence.	Texas A&M Commerce/RELLIS Bryan TX
Senior Software Engineer March 2018 - August 2019 Building containerized gateway platform to deliver security services to the customers in an efficient and effective manner. Researching and developing new innovative security solutions using <i>Linux containers</i> and <i>hardware virtualization</i> . Involved with design, development, and testing applications to overcome challenges in building distributed systems using containers and other virtualization technologies.	Qualys, Inc. Foster City CA
Senior Security Research Engineer August 2016 - March 2018 Developed the next generation dynamic malware analysis sandbox solution which thwarts many malware evasion techniques. Using modern hardware <i>virtualization technologies</i> , engineered a completely agent-less dynamic malware analysis sandbox solution to trace every detail of malware execution. Contributed to the research, analysis, design, and development of various components of the sandbox platform.	Qualys, Inc. Foster City CA

Senior Security Scientist

May 2015 - May 2016

Armor Defense Inc.

Richardson TX

As a member of the R&D team, developed patents for detecting malware activity using *virtual machine introspection*. Developed various tools and processes for the Security Operations Center (SOC). Designed and developed a collective threat intelligence framework using big-data framework. Oversaw *requirements analysis* for a new security orchestration product. Conducted stakeholder interviews and facilitated extensive discussion across various teams.

Research Assistant

Sep 2012 - Apr 2015

University of North Texas

Denton TX

Designed and built Race-free on-demand integrity measurement (Radium) architecture. Radium provides a trustworthy mechanism to remotely verify the integrity of a cloud workload. Radium uses *LibVMI* virtual machine introspection library and *Volatility* memory forensics framework. Designed and built *ontology* based *vulnerability assessment* framework for cloud computing (Vulcan). Vulcan allows to model the cloud infrastructure in a simple fashion and performs efficient assessments.

Teaching Assistant

Sep 2012 - Dec 2013

University of North Texas

Denton TX

Worked as teaching assistant for various *graduate and undergraduate courses*. Notably, Introduction to Computer Security and Information Assurance Systems. Prepared virtualization based *lab and hands-on assignments* for various security courses. Prepared lab manuals with detailed steps for using virtual labs. Helped in preparation and evaluation of assignments, tests, and projects.

Software Engineer

Feb 2012 - Aug 2012

Fidelity Investments

Westlake TX

Member of CoreOps, worked with the Service Manager and AlarmPoint teams. During the AlarmPoint *migration to Linux* from Unix, responsible for converting ksh based shell scripts to bash. Tested and debugged AlarmPoint compatibility with bash scripts. Updated and maintained team website for Service Manager team and won "*On the Spot*" award.

Research Assistant

Sep 2010 - Jan 2012

University of North Texas

Denton TX

Created a framework to implement hardware security architectures in the hypervisor. The framework can be used for testing and implementing hardware architectures in virtualized environments like Cloud. Implemented *new hypercalls, user-level (ring-3) to hypervisor hypercalls*, DomU to Dom0 communication through hypercalls and VIRQs. Created Linux kernel modules and implemented system calls. Created an Ontology for National Vulnerability Database (NVD) and developed *Ontological Vulnerability Database (OVDB)*. Developed an automated vulnerability assessment tool using SCAP protocol and OVDB.

Associate Educator

Jun 2008 - July 2010

Infosys Technologies Ltd.

Mysore, India

Trained employees of Infosys in variety of computer science and engineering topics such as: Object Oriented Programming (OOP), RDBMS, web technologies, analyzing, designing, and development of *enterprise applications using JEE technology*. Deploying and maintaining applications on Tomcat/JBOSS servers was taught on both Windows and UNIX/Linux platforms. Prepared training material, assessments, conducted classroom training, and provided assistance to students during lab sessions. Conducted *remote training* sessions on building enterprise applications and infrastructure monitoring.

TECHNICAL SKILLS**Systems Development:** Assembly, C, Go; Intel: TXT, VT-x, VT-d.**Software Development:** Python, Java, Agile methodologies.**Web Development:** HTML5, CSS3, JavaScript, Bootstrap, React.**Courses Development:** D2L, Blackboard, Moodle, MS Word, MS PowerPoint, MS Excel.**Cloud Computing:** OpenStack, Xen, Citrix, Docker.

AWARDS & HONORS

Blackhat USA **student scholarship** award for the years 2014, 2015.
Annual Computer Security Applications Conference **student conferenceship** award.
1st place in **digital forensics** workshop by Sandia National Labs at ACSAC 2013.
3rd place in regional level South West **Collegiate Cyber Defense** Competition.
18th place in **National Cyber League** (NCL) Midwestern Gold Brackets.

MEMBERSHIPS

Association for Computing Machinery (ACM) - Professional Member.
Phi Kappa Phi (PKP) honor society (**top 10%** graduate students).
Founder and President of Club for Cyber Security and Intelligence (CCSI).
Vice President of **Collegiate Entrepreneurship** Organization (CEO).

PROFESSIONAL ACTIVITIES

2019 - Present: TAMUC/RELLIS recruitment drive.
2019 - Present: RELLIS Cyber Alliance member.
2019 - Present: Texas A&M Cybersecurity Center - Faculty Fellow.
2012 - 2014: Cloud Security Alliance member.
2011 - 2015: Dallas Hacker Association member.

PUBLICATIONS

- [1] **Srujan Kotikela** (2018) Secure and Trusted Execution for Virtualization Workloads, NT Dissertation Computer Science and Engineering, Denton, Texas.
- [2] **Srujan Kotikela**, Tawfiq Shah, Mahadevan Gomathisankaran, Gelareh Taban (2015) Radium: Race-free On-demand Integrity Measurement Architecture In: International Conference on Privacy, Security, Risk and Trust (PASSAT) ASE.
- [3] Patrick Kamongi, **Srujan Kotikela**, Mahadevan Gomathisankaran, Krishna Kavi (2013) A methodology for ranking cloud system vulnerabilities In: 2013 Fourth International Conference on Computing, Communications and Networking Technologies (ICCCNT),1-6.
- [4] Patrick Kamongi, **Srujan Kotikela**, Krishna Kavi, Mahadevan Gomathisankaran, Anoop Singhal (2013) VULCAN : Vulnerability Assessment Framework for Cloud Computing In: 2013 IEEE 7th International Conference on Software Security and Reliability (SERE), 218-226.
- [5] Satyajeet Nimgaonkar, **Srujan Kotikela**, Mahadevan Gomathisankaran (2012) CTrust : A framework for Secure and Trustworthy application execution in Cloud computing Academy of Science and Engineering (ASE) Science Journal 1: 4. 152-165.
- [6] **Srujan Kotikela**, Krishna Kavi, Mahadevan Gomathisankaran (2012) Vulnerability Assessment in Cloud Computing In: The 2012 International Conference on Security & Management (SAM 2012) 67-73 CSREA Press.
- [7] Satyajeet Nimgaonkar, **Srujan Kotikela**, Mahadevan Gomathisankaran (2012) CTrust : A Framework for Secure and Trustworthy Application Execution in Cloud Computing In: 2012 International Conference on Cyber Security (CyberSecurity), 24-31.
- [8] **Srujan Kotikela**, Satyajeet Nimgaonkar, Mahadevan Gomathisankaran (2011) Virtualization Based Secure Execution and Testing Framework In: 7th International Association of Science and Technology for Development (IASTED) Parallel and Distributed Computing Systems, Secretariat, B6, Suite 101, 2509 Dieppe Ave. SW, Calgary, AB, Canada T3E 7J9: ACTA PRESS.

PRESENTATIONS

- [1] **Srujan Kotikela**, Tawfiq Shah, Mahadevan Gomathisankaran, Gelareh Taban (2015) Radium: Race-free On-demand Integrity Measurement Architecture In: International Conference on Privacy, Security, Risk and Trust (PASSAT) ASE.
- [2] **Srujan Kotikela**, Mahadevan Gomathisankaran (2013) Privacy Against Unlawful Surveillance (PRIUS) In: Annual Computer Security Applications Conference (ACSAC), New Orleans, Louisiana.
- [3] Srujan Kotikela, **Satyajeet Nimgaonkar**, Mahadevan Gomathisankaran (2011) : Virtualization Based Security Framework (vBASE) In: Annual Computer Security Applications Conference (ACSAC), Orlando, Florida.

PATENTS

- [1] Schilling, J. R.; Cunningham, C. C.; Shah, T. M.; **Kotikela, S. D.** (Sep 2019) Detecting Malicious Instructions in a Virtual Machine Memory, US 15/169,230
- [2] Schilling, J. R.; Cunningham, C. C.; Shah, T. M.; **Kotikela, S. D.** (Feb 2019) Detecting Malicious Instructions on a Virtual Machine, US 10/210,324
- [3] Schilling, J. R.; Cunningham, C. C.; Shah, T. M.; **Kotikela, S. D.** (Feb 2019) Detecting Malicious Instructions on a Virtual Machine Using Profiling, US 10/255,432
- [4] Schilling, J. R.; Cunningham, C. C.; Shah, T. M.; **Kotikela, S. D.** (Feb 2019) Extracting and Detecting Malicious Instructions on a Virtual Machine, US 10/210,325
- [5] Schilling, J. R.; Cunningham, C. C.; Shah, T. M.; **Kotikela, S. D.** (Feb 2019) Extracting Malicious Instructions on a Virtual Machine, US 15/169,248
- [6] Schilling, J. R.; Cunningham, C. C.; Shah, T. M.; **Kotikela, S. D.** (Dec 2018) Extracting malicious instructions on a Virtual Machine in a network environment, US 10/157,276