

# PADMAPANI SENEVIRATNE

## PRESENT ADDRESS

Department of Mathematics  
Texas A&M University-Commerce  
Commerce, TX 75428.

## CONTACT INFORMATION

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## RESEARCH INTERESTS

Error Correcting Codes: Codes, Graphs & Designs.

## EDUCATION

**Clemson University, South Carolina, USA.**

Ph.D. August 2007.

• Advisor: Dr Jennifer D. Key.

• Dissertation Topic: "Permutation decoding and codes from graphs and designs."

M.S. Mathematics, May 2003.

**University of Peradeniya, Sri Lanka.**

B.Sc.(Mathematics), 1999.

## PROFESSIONAL EXPERIENCE

<b>Associate Professor(with tenure)</b>	Texas A&M University-Commerce	09/01/2017-Present
<b>Assistant Professor</b>	Texas A&M University-Commerce	09/01/2014 -08/2017.
<b>Assistant Professor</b>	American University of Sharjah	08/2007-08/2014
<b>Graduate Teacher of Record</b>	Clemson University, SC	08/2001 - 07/2007

## PUBLICATIONS(Refereed Articles)

1. Taher Abualrub, Fred Ezerman, **Padmapani Seneviratne** and Patrick Solé, "Skew Generalized Quasi Cyclic Codes", *TWMS journal of Pure and Applied Mathematics*, (October 2018), Volume 9, Issue 2.
2. **P. Seneviratne** and L. Melcher, "LCD codes from projective spaces", *Discrete Mathematics, Algorithms and Applications(DMAA)*, Accepted.
3. **P. Seneviratne** and L. Melcher, "On generalized MacDonal codes", *Involve-A journal of Mathematics*, (2018), Volume 11, Issue 5, pp 885-892.
4. J. D. Key and **P. Seneviratne**, "Partial permutation decoding for MacDonal codes", *Applicable Algebra in Engineering, Communication and Computing(Springer)*, AAEECC, (November 2016), Volume 27, Issue 5, pp 399412.
5. **P. Seneviratne**, "Generalized hypercube graph  $Q_n(S)$ , graph products and self-orthogonal codes", *Journal of Algebra Combinatorics Discrete Structures and Applications*, Vol. 3 No 1 (2016), 37-44.
6. **P. Seneviratne**, "Codes from multipartite graphs and minimal permutation decoding sets," *Discrete Mathematics, Algorithms and Applications*, Vol. 7 No 4 (2015), 1550060 (7 pages).
7. **P.Seneviratne**, "Codes associated with circulant graphs and Permutation decoding". *Designs, Codes & Cryptography*. Volume 70, Issue 1-2, 2014.
8. **P. Seneviratne** and J. Limbupasiriporn, "Permutation decoding of codes from generalized Paley graphs". *Applicable Algebra in Engineering, Communication and Computing(Springer)*, AAEECC (2013) 24:225-236.
9. T. Abualrub, N. Aydin, **P.Seneviratne**, " $\theta$ -cyclic codes over  $\mathbb{F}_2 + v\mathbb{F}_2$ ", *Australian Journal of Combinatorics*. Volume 54 (2012), 115 - 126.
10. Irfan Siap, Taher Abualrub, Nuh Aydin, **P.Seneviratne**, "Skew Cyclic Codes Of Arbitrary Length". *International Journal of Information and Coding Theory*. Volume 2, Issue 1(2011), 10-20.

11. T. Abualrub, **P.Seneviratne**, "Skew codes over rings", *Lecture Notes in Engineering and Computer Science* Year: 2010 Vol: 2181 Issue: 1 Pages: 846-847.
12. **P.Seneviratne**, "Partial permutation decoding for the first-order Reed-Muller codes". *Discrete Mathematics*, Volume 309 (2009) 1967-1970.
13. J.D. Key and **P. Seneviratne**. "Permutation decoding for binary codes from lattice graphs". *Discrete Mathematics*, Volume 308, Issue 13, 6 July 2008, Pages 2862-2867.
14. J.D. Key and **P. Seneviratne**, "Permutation Decoding for Binary Self-Dual Codes from the Graph  $Q_n$ , where  $n$  is Even". *Advances in Coding Theory and Cryptography*, Series on Coding Theory and Cryptography, 3. pages 152-159, 2007.
15. J.D. Key and **P. Seneviratne**, "Codes from the line graphs of complete multipartite graphs and PD-sets". *Discrete Mathematics*, 307(2007), 2217-2225.
16. J.D. Key & **P.Seneviratne**, "Binary codes from rectangular lattice Graphs & permutation decoding", *European J. Combinatorics*, 28(2007), 121-126.

#### CONFERENCE PROCEEDINGS(Refereed)

17. **P. Seneviratne**. "Codes associated with circulant graphs and permutation decoding", *Proceedings of the Third International Castle Meeting on Coding Theory and Applications, Cardona Castle in Cardona, (Editors: J. Borges and M. Villanueva) Pages: 257 - 264. volume I, 2011.*
18. T. Abualrub, I. Siap and **P.Seneviratne**. "On the construction of skew cyclic codes for any length", *Proceedings of the 3rd International conference on modeling, simulation and applied optimization(ICMSA)'09*.
19. **P.Seneviratne**, "Binary codes from complete multipartite graphs and permutation decoding", *Proceedings of the 3rd International conference on modeling, simulation and applied optimization(ICMSA)'09*.

#### PRESENTATIONS

1. "Binary codes from line graphs of circulant graphs", MCCCC 32, Duluth MN, October 5-7, 2018.
2. "Codes from Paley-type bipartite graphs", Combina-Texas conference, Texas A&M University, February 10-11, 2018.
3. "Paley-type bipartite graphs and self-dual codes", Mathematical Congress of the Americas, July 24-29, 2017, Montreal, Canada. Invited-talk.
4. "On a class of few weight codes", AMS-Fall Central sectional meeting, October 28-30, 2016, Minneapolis, MN. Invited-talk.
5. "(0, 2)-graphs and their codes", Joint Mathematics Meetings, January 10-13, 2015, San Antonio, TX.
6. "Self-dual codes from (0, 2)-graphs", Antalya Algebra days, 2014, Antalya, Turkey.
7. "Permutation decoding for codes from generalized Paley graphs", 18th International Conference on Applications of Computer Algebra, special session on coding theory, June 25-28, 2012, Sofia, Bulgaria.
8. "Codes from generalized Paley graphs", Joint Mathematics Meetings 2012, January 04-07, Boston, MA, USA.
9. "Codes associated with circulant graphs and Permutation decoding". 3rd International Castle Meeting on Coding Theory and Applications, September 11-15, 2011, Cardona, Spain.
10. "Codes from multipartite graphs and permutation decoding". The 3rd biennial Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), May 31 - June 03, 2011. Victoria, BC, Canada.
11. "Skew Cyclic Codes Over  $F_2 + \nu F_2$ ". Algebraic Combinatorics & Applications(ALCOMA'10), April 11- 18, 2010. Thurnau, Germany.

12. “An optimal class of binary codes for permutation decoding”. Fortieth Southeastern International Conference on Combinatorics, Graph Theory and Computing. March 2-6, 2009, Florida Atlantic University, Boca Raton, USA.
13. “Binary Codes from Complete Multi-Partite Graphs and Permutation Decoding”. ICMSAO’09 Third International Conference On Modeling, Simulation, and Applied Optimization, January 20 - 22, 2009, Sharjah, UAE.
14. P. Seneviratne and G. L. Matthews. “Partial permutation decoding of Hermitian codes”. Special Session on Algebraic Coding Theory honoring the retirement of Harold N. Ward at AMS Central Section Meeting, Chicago, IL (October 2007).

#### **GRANTS-Funded**

- MAA-NREUP(funded by the NSF Grant DMS-1652506), Summer 2018, \$28,260. (ROLE: Co-PI).
- Faculty Research Enhancement Project(FREP) Grant, TAMUC, \$9880, Role: PI, 2016/2017.

#### **Other competitive grants**

- Young Mathematicians Conference 2018, Ohio State University, Mentor-travel grant \$300.
- International faculty development award, TAMUC, \$1200, Spring 2017.

#### **Grants-AUS**

- Professional development grant 2009, \$2935.
- Professional development grant 2010, \$3107.
- Professional development grant 2011, \$3500.
- Travel grant 2011, \$2000.
- Professional development grant 2012, \$2500.
- Professional development grant 2013, \$2764.
- Professional development grant 2014, \$2397.

### **STUDENT RESEARCH ADVISING**

#### **Undergraduate**

- Lauren Melcher, Graduated May 2018, Now a Ph.D. candidate in Mathematical Modelling, Rochester Institute of Technology.
- Renee Landers.

#### **Graduate**

- Arife D. Altin, Graduated August 2018, Now a Ph.D. candidate in Mathematics, University of Memphis.

#### **REU-students**

- MAA-NREUP summer 2018, Supervised Alexander Westbrook and Jennifer Melendez on the project “Properties and parameters of binary codes from line graphs of circulant graphs”.

## **HONORS AND AWARDS**

- Clemson University: MURI Graduate Research Fellowship, 2005.
- Clemson University: Department of Mathematical Sciences Teaching excellence award, 2004.
- University of Peradeniya, Sri Lanka: University Scholarship for the year 1998/1999.
- University of Peradeniya, Sri Lanka: First class Honors in Mathematics 1999.

## **PROFESSIONAL DEVELOPMENT**

Completed the faculty teaching certificate program 2011/2012 at the American University of Sharjah.

## **SERVICE: PROFESSIONAL**

- American Mathematical Society - Book Donations Steering Committee member.

## **Reviewer/Editorial**

- Guest Editor: For the International Journal of Mathematics and Mathematical Sciences, special issue of the “First International Conference on Mathematics and Statistics (AUS-ICMS10).
- Reviewer for the American Mathematical Society - Mathematical Reviews.
- Reviewer for the following international journals:
  - Annals of Combinatorics
  - Graphs and Combinatorics
  - Discrete Mathematics.
  - Designs, Codes & Cryptography.
  - IEEE Transactions on Communications.
  - Advances of Mathematics of Communication.
  - International Journal of Information and Coding Theory.

## **Conference Organization**

- Organizing committee member of the 97th TX-MAA annual meetings, March 30 - April 1, 2017, Commerce, TX.
- Organizing committee member of the ‘Ninth International Conference on Differential Equations and Dynamical Systems’, May 14-16, 2015, Dallas, USA.
- Program committee member of the ‘International Conference on Coding and Cryptography (ICCC 2015)’, November 2-5, 2015, Algiers, Algeria.
- Organizing committee member of AMS co-sponsored meeting AUS-ICMS’10 with over 300 participants.
- Chaired the session “Coding theory & Cryptography” at the third International Conference on Modeling, Simulation and Applied Optimization, January 20-22, 2009. Sharjah, UAE.

## **SERVICE: UNIVERSITY/COLLEGE/DEPARTMENT**

## TAMUC

- Member, CoSE Scholarship committee, 2014- present.
- Member, Mathematics department scholarship committee, 2015-present.
- Member, Mathematics department search committee, 2015/2016.
- Colloquium coordinator(Math department), 2014- 2015.
- Five year degree plan committee member(Math department).
- Adventures in Mathematics organizing committee member.
- TX-MAA 2017 meeting organizing committee member.

## AUS

- Member of the faculty senate sub-committee on Budget and Finance 2012/2013, American University of Sharjah.
- Actively served in the following departmental committees:
  - Seminar coordinator: 2013/2014.
  - Chair: Math placement exam committee: 2011/2012.
  - Accreditation committee: 2012/2013, 2013/2014.
  - Search committee: 2008/2009, 2010/2011.
  - Curriculum committee: 2009/2010.
  - Information Technology committee: 2007/2008.
  - Research activities committee. 2009/2010.
- Coordinated the following multi-section courses:
  - MTH 101 - Mathematics for Business I.
  - MTH 102 - Mathematics for Business II.
  - MTH 221 - Linear Algebra.

## MEMBERSHIPS

- American Mathematical Society.

## TEACHING

### Texas A&M University-Commerce.

- Graduate
  1. MATH 531-Theory of Matrices, Fall 2016.
  2. MATH 523-Topology II, Summer II, 2016, 2017, 2018.
  3. MATH 522-Topology I, Summer I, 2016, 2017, 2018.
  4. MATH 537-Theory of Numbers, Spring 2016, Spring 2018.
  5. MATH 543-Abstract Algebra I, Fall 2018.
- Undergraduate
  1. Math 176-Mathematics for Business Applications II - Spring 2015, Fall 2015, Fall 2017.
  2. MATH 2413-Calculus I - Spring 2016, Fall 2017, Spring 2018.
  3. MATH 192-Calculus II - Fall 2014.
  4. MATH 314-Calculus III - Fall 2014, Spring 2015, Fall 2016, Fall 2017, Spring 2018.
  5. MATH 315-Differential Equations - Fall 2014.
  6. MATH 334-Introduction to Abstract Algebra - Summer II 2015, Fall 2015.

7. MATH 335-Linear Algebra - Spring 2015, Spring 2017, Summer II 2018.
8. MATH 401-Introduction to Mathematical Statistics - Fall 2015, Fall 2016.
9. MATH 437-Theory of Numbers - Spring 2017.
10. MATH 453-Essentials of Statistics - Fall 2015.
11. MATH 489-Partial Differential Equations - Spring 2016(Independent study).

**American University of Sharjah.**

- MTH 100 - Fundamentals of Logic & Geometry.
- MTH 101 - Mathematics for Business I.
- MTH 102 - Mathematics for Business II.
- MTH 111 - Mathematics for Architecture.
- MTH 203 - Calculus III.
- MTH 205 - Differential Equations.
- MTH 211 - Geometry in Art & Architecture.
- MTH 213 - Discrete Mathematics.
- MTH 320 - Abstract Algebra I.
- MTH 325 - Coding Theory(Independent study).

**Clemson University.**

- MTHSC 101 - Finite Probability.
- MTHSC 106 - Calculus I.
- MTHSC 108 - Calculus II.
- MTHSC 206 - Calculus III.