SARA SHIRINKAM

University of the Incarnate Word
Department of Mathematics and Statistics
4301 Broadway, CPO 311
San Antonio, TX 78209

Tel: 210-829-3170
Email: shirinka@uiwtx.edu

EDUCATION

Post Doc Fellow (2012-2013)
Center of Simulation, Visualization, and Real-time Prediction
University of Texas at San Antonio, San Antonio, Texas, USA

Ph.D. in Mathematics (2008-2012)
K.N. Toosi University of Technology (KNTU), Tehran, Iran (2008-2010) and
University of Tennessee, Knoxville, Tennessee, USA (2010-2012)
Degree awarded by KNTU

Visiting Scholar (October 2010-March 2011)
Department of Industrial and Systems Engineering
Wayne State University, Detroit, Michigan, USA

Master of Science in Mathematics (2004-2006)
Isfahan University of Technology, Isfahan, Iran

Bachelor of Science in Mathematics (2000-2004)
Razi University, Kermanshah, Iran

APPOINTMENT

Visiting Assistant Professor, Department of Mathematics and Statistics, University of the Incarnate Word (Fall 2018-Present)

Lecturer III, Department of Mathematics, University of Texas at San Antonio (2013-Present)

Adjunct Faculty, Department of Mathematics and computer science, San Antonio College (Fall 2013)

Post- Doc Fellow, Department Mechanical Engineering, University of Texas at San Antonio (2012-2013)

Visiting Scholar, Department of Industrial and Systems Eng., Wayne State University (2010- 2011)

Faculty Member, Department of Electrical and Computer Eng., Azad University-Qazvin (2004-2008)

Lecturer, Department of Sociology, University of Tehran, Iran (Fall 2007- Spring 2008)

Lecturer, Department of Mathematics, Payam Noor University, Iran (Fall 2005- Spring 2006)

CONTRIBUTION TO RESEARCH GRANTS

Chrysler LLC., (2009-2011), $77,000
Advanced Data Analysis Module Development for the New Generation of Body Shop Analysis Toolbox
PI: K. Yang, Senior Personnel: S. Shirinkam
Institution names: Wayne State University (WSU)

PUBLICATIONS

- **Journal Papers**

  1. S. Shirinkam, A. Alaeddini, H. R. Millwater, On the Application of Multicomplex Algebras in Numerical Integration, *Appl. Math. Inf. Sci.*, (2016) 10 (1): 1-9.

  2. D. F. Anderson, S. Shirinkam, Some Remarks on the Graph $\Gamma_I(R)$, *Comm. Algebra.* (2014) 42: 545-562.

     ♣ *Selected paper for the Mathematics & Statistics Article of the Week at Taylor & Francis*

  3. H. R. Millwater, S. Shirinkam, Multicomplex Taylor Series Expansion for Computing High-Order Derivatives, *Int. J. Appl. Math.*, (2014) 27 (4): 311-334.

  4. SH. Ghalandarzadeh, S. Shirinkam, P. Malakooti Rad, Annihilator Ideal-Based Zero-Divisor Graph Over Multiplication Modules, *Comm. Algebra.* (2013) 41:1-15.

  5. D. F. Anderson, SH. Ghalandarzadeh, S. Shirinkam, P. Malakooti Rad, On The Diameter of The Graph $\Gamma_{Ann(M)}(R)$, *Filomat.* (2012) 26 (3): 623-629.

  6. SH. Ghalandarzadeh, P. Malakooti Rad, S. Shirinkam, The Connected Subgraph of Torsion Graph over Modules, *Korean Math. Soc.* (2012) 49 (5): 1031–1051.

  7. P. Malakooti Rad, SH. Ghalandarzadeh, S. Shirinkam, On the Torsion Graph and Von Neumann Regular Rings, *Filomat.* (2012) 26 (2): 47-53.

  8. SH. Ghalandarzadeh, P. Malakoti Rad, S. Shirinkam, On Annihilators of Polynomial Near-Rings, *Mathematical Notes.* (2011) 89 (3): 342-439.

  9. SH. Ghalandarzadeh, S. Shirinkam, P. Malakoti Rad, Some Remarks on Multiplication and Gelfand Modules, *The Southeast Asian Bulletin of Mathematics.* (2009) 33: 237–243.

  10. SH. Ghalandarzadeh, P. Malakoti Rad, S. Shirinkam, Multiplication Modules and Cohens Theorem, *Mathematical Sciences.* (2008) 2 (3): 251-260.

- **Submitted/Working Papers**

  1. S. Shirinkam, A. Alaeddini, E. Gross, Identifying the Number of Components in Gaussian Mixture Models using Numerical Algebraic Geometry, submitted to Journal *of Advances in Data Analysis and Classification* (Submitted paper).

  2. S. Shirinkam, P. Malakooti Rad, SH. Ghalandarzadeh, N-Generalized Quasi-Baer Annihilator Conditions, Journal of Interdisciplinary Mathematics, (Submitted paper).

  3. S. Shirinkam, P. Malakooti Rad, α-Skew Armendariz Modules, (Working paper).

- **Conferences**

  1. S. Shirinkam, n-generalized quasi-Baer annihilator conditions, *Texas Women in Mathematics Symposium*, University of Houston, November 17-18, 2018

  2. S. Shirinkam, A. Alaeddini, E. Gross, Identifying clusters of in-control and out-of-control parts in manufacturing processes using numerical algebraic geometry and nonparametric regression, *SIAM Conference on Applied Algebraic Geometry,* Atlanta, GA, July 31-August 4, 2017.

  3. S. Shirinkam, A. Alaeddini, E. Gross, Model selection for gaussian mixtures with numerical algebraic geometry, *SIAM Conference on Applied Algebraic Geometry,* Atlanta, GA, July 31-August 4, 2017.

4. S. Shirinkam, Numerical algebraic geometry for identifying the number of components in Gaussian Mixture Models, *Joint Mathematics Meetings*, Atlanta, GA, January 4-7, 2017.

5. S. Shirinkam, A Computational Algebraic Approach for model selection in Gaussian Mixture Models, *Texas Women in Mathematics Symposium*, University of Texas at Austin, November 5, 2016

6. S. Shirinkam, On the Ideal-Based Zero-Divisor Graph of a Semiring, *Joint Mathematics Meetings*, Seattle, WA, January 6-9, 2016.

7. S. Shirinkam, A. Alaeddini, An Application of Multicomplex Algebras in Numerical Optimization, *Joint Mathematics Meetings*, Seattle, WA, January 6-9, 2016.

8. S. Shirinkam, *Joint Mathematics Meetings*, San Antonio, TX, January 10-13, 2015.

9. S. Shirinkam, *Joint Mathematics Meetings*, San Diego, CA, January 9-12, 2013.

10. S. Shirinkam, SH. Galandarzadeh, P. Malakooti Rad, On the Annihilator Ideal-Based Zero-Divisor Graph of a Ring and the Torsion Graph of a module, *1069th AMS Meeting*, University of Iowa, Iowa City, Iowa, March 18-20, 2011.

11. S. Shirinkam, A. Alaeddini, K. Yang, Feature Selection for Unlabeled Data with Complex Structure, *IERC 2011*, Reno, Nevada (2011).

12. A. Alaeddini, S. Shirinkam, K. Yang, An Adaptive Sequential Bayesian Methodology for Process Optimization, *IERC 2011*, Reno, Nevada (2011).

13. A. Alaeddini, K.Yang, S. Shirinkam, Feature Selection for Unlabeled Data with Complex Structures for Quality Improvement, *INFORMS 2011*, Charlotte, NC (2011).

14. S. Shirinkam, SH. Galandarzadeh, P. Malakooti Rad, Weakly Continuous Modules, *International Conference of Mathematical Sciences*, Istanbul, Turkey, 04-10 August, 2009.

15. P. Malakooti Rad, SH. Galandarzadeh, S. Shirinkam, Torsion Graph of Modules, *International Conference of Mathematical Sciences*, Istanbul, Turkey, 04-10 August, 2009.

16. S. Shirinkam, SH. Galandarzadeh, Weakly Prime Submodules, *7th International Algebraic Conference*, Kharkov, Ukraine August 18-23, 2009.

17. S.Shirinkam, N-Generalized Quasi-Baer Annihilator Conditions, *19th Algebra Seminar*, Mathematics Department, Semnan University, 12-13 March 2008.

18. SH. Ghalandarzadeh, P. Malakoti Rad, S. Shirinkam, On Annihilator Ideals of a Polynomial Nearring over A Noncommutative Nearring, *19th Algebra Seminar*, Mathematics Department, Semnan University, 12-13 March 2008.

19. SH. Ghalandarzadeh, P. Malakoti Rad, S. Shirinkam, Some Remarks on Multiplication Modules, *17th Seminar on Algebra*, Mathematics Department University of Sistan & Baluchestan, 8-9 March, 2006.

20. SH. Ghalandarzadeh, S. Shirinkam, P. Malakoti Rad, Multiplication & gelfand modules, *17th Seminar on Algebra*, Mathematics Department University of Sistan & Baluchestan, 8-9 March, 2006.

TEACHING EXPERIENCE

▪ **Courses Taught**

Visiting Assistant Professor at University of the Incarnate Word (Fall 2018-Present)
   Department of Mathematics and Statistics

◊ College Algebra
◊ College Geometry
◊ Calculus II

Lecturer III at University of Texas, San Antonio (Spring 2013- Present)

Department of Mathematics

◊ Online Calculus I
◊ Online Calculus for the Biosciences
◊ Modern Abstract Algebra
◊ Calculus I
◊ Calculus for the Biosciences

Adjunct Faculty at San Antonio College (Fall 2013)

Department of Mathematics and computer science

◊ Precalculus

Faculty at Azad University-Qazvin, Iran (Fall 2006- Spring 2010)

Department of Management and Accounting

◊ Applications of Mathematics in Management
◊ Calculus I

Department of Mechanical and Industrial Engineering

◊ Applied mathematics
◊ Statistics

Department of Electrical and Computer Engineering

◊ Calculus II, III
◊ Differential Equations

Lecturer at University of Tehran, Tehran, Iran (Fall 2007- Spring 2008)
♣*Tehran University is one of the top universities in the Middle East.*
Department of Sociology

◊ Planning Mathematics

Lecturer at Payame Noor University, Isfahan, Iran (Fall 2005- Spring 2006)

Department of Mathematics

◊ Modern Abstract Algebra
◊ Discrete Mathematics
◊ Numerical Methods

▪ **Teaching Assistantship**
Teaching Assistant at K. N. Toosi University of Technology, Tehran, Iran (Spring 2009- Spring 2010)

Department of Mathematics

◊   Abstract Algebra
◊   Advanced Abstract Algebra

- **Course Development and Design**
    - ◊   Online Calculus
    - ◊   Online Calculus for the Biosciences

CERTIFICATIONS

- Teaching Hybrid Courses

- Teaching Online Courses

- Lean 6- Sigma Green Belt

- **Certifications by Johns Hopkins University on Coursera:**

    1. The Data Scientist's Toolbox
    2. R Programming
    3. Getting and cleaning data
    4. Exploratory Data Analysis

SERVICE ACTIVITIES

- University of Texas at San Antonio
  Department of Mathematics Scholarship and Award Committee member
  Colloquium Committee and
  Core Curriculum Committee

- Mathematical Reviews Reviewer

COMPUTER SKILLS

- Programing: MATLAB, R

- Data/Decision Analysis software: Minitab, Microsoft Excel, Decision Tree

- Algebraic software: Bertini, Macaulay 2, GAP

- Professional writing: LaTex