

Curriculum Vitae

Cheri Shakiban
Professor of Mathematics
University of St. Thomas

Educational Data

Sc.B.1973 National University of Iran, Mathematics

Ms. 1976 Harvard University, Mathematics

Ph.D.1979 Brown University, Mathematics

Professional Experience

- University of Oxford, England, 1979, Dept. of Mathematics.
- University of Minnesota, 1980-81. School of Mathematics.
- College of St. Catherine, St. Paul, MN., 1981-1983, Dept. of Mathematics.
- University of St. Thomas, St. Paul, MN, Professor of Mathematics,
- Chair of the Dept. of Mathematics, University of St. Thomas, 1996 – 2004.
- Associate Director of IMA, University of Minnesota, Mpls. MN. 2006 –2015.

Selected Publications:

- [1] Calabi, E., Olver, P.J., Shakiban, C., Tannenbaum, A., and Haker, S., paper, Differential and numerically invariant signature curves applied to object recognition, Int. J. Computer Vision 26 (1998) 107-135.
- [2] Hennessey, M. and Shakiban, C. and Shvartsman, M, Characterizing Slop in Mechanical Assemblies Using Differential Geometry, the Journal of Computing and Information Science in Engineering, vol 2, 150 -159. (2002).
- [3] Lloyd, R. and Shakiban, C., on Classification of Signature Curves Using Latent Semantic Analysis, Lecture Notes in Computer Science (LNCS) series, Springer-Verlag, Spring 2005.
- [4] Hennessey, M. and Shakiban, C., The Brachistochrone with Coulomb Friction and Aerodynamic Drag, ASME, Journal of Dynamic Measurement, and Control, 2010.
- [5] Leonard, M., and Shakiban, C. The Incan Abacus: A Curious Counting Device, Journal of Mathematics and Culture, Volume 5 Number 2, November 2010.
- [6] Hennessey, M. and Shakiban, C., Mathematics and Architecture of the Incas in Peru, American Society for Engineering Education, Annual Conference of ASEE, 2011.
- [7] Shakiban, C. and Jack Stangl., Cumulative Distance Histogram and their Application to the Identification of Melanoma. , Proceedings of the Education & Math & Engineering Technology Conference, June 2013.
- [8] Hennessey, M. P., Beaulier, A., and Shakiban, C., “Modeling & 3D Printing of Ruled Surfaces,” 35th ASME Computers & Information Science in Engineering Conference, DETC2015-46494
- [9] Grim, A., Shakiban, C. “ Breast Cancer with Symmetry of Signature Curves”, Minnesota Journal of Undergraduate Mathematics Online (MJUM), Published Vol 1, No 1 (2015), <https://mjum.math.umn.edu/index.php/mjum/issue/view/2>
- [10] Grim A., O’Conner, T., Olver, P., Shakiban, C., Slechta, R., Thompson, R., “Automatic Reassembly of three dimensional Jigsaw Puzzles”, Humpty Dumpty using Signature Curves", Published International Journal of Image and Graphics (IJIG's Volume No.16, Issue No. 02. <http://dx.doi.org/10.1142/S0219467816500091>

[11] Grim, A., Shakiban, C. “Diagnosing Breast Cancer with Cumulative Distance Histograms ”, SIAM Undergraduate Research Online (SIURO), Accepted, June 17, 2016.

Book:

Olver P. and Shakiban C. Applied Linear Algebra, Prentice--Hall, Inc., Englewood Cliffs, N.J., January 2005.

Synergistic Activities

- UMAIE courses: Mathematical Symmetry of Southern Spain (Jan 2004, Jan 2006), Mathematics of the Incas (Jan 2008, Jan, 2010), and Math & Mechanics of Byzantine, Roman and Islamic Culture (Jan 2012, Jan 2014, Jan 2016)
- 2001-2005: PI National Science Foundation grant CSEMS, Computer Science, Engineering and Mathematics Scholarships at the University of St. Thomas for the amount of \$400,000.00 for four years supporting over 120 students majoring in Computer Science, Engineering and Mathematics.
- May 2005 Award: sixth annual Faculty Award for Undergraduate Research and Collaborative Scholarship, University of St. Thomas.
- April 2009, and March 2013: Organizer: Career Options for Women in Mathematical Sciences conference, IMA.
- June 2009: Travel grant awarded to participate in the "Math Teachers' Circle "workshop at the AIM Institute in California. And from August 2010- Present: Co-organizer of “math teacher circles”, workshops at the University of St. Thomas.
- July 2009: Awarded NSF proposal DMS-0938070, amount of \$ \$36,770 to organize the Modern Mathematics Workshop at SACNAS, October 2009, Dallas, Texas.
- July 2010: Awarded NSF grant DMS-1038424 for the amount of \$37,300 to organize the Modern Math Workshop, SACNAS 2010, Anaheim, California.
- March 2012: Organizer: Short Course, Infinite Possibilities Conference, March, 2012, Baltimore, Md.
- March 2015: Organizer: Careers in Mathematical Sciences: Workshop for Underrepresented Groups, IMA, University of Minnesota.
- May 2016: Keynote Speaker: Using Signature Curves in Object recognition, International conference on Differential Equations and Applications, May 26-28, 2016, The Lahore University of Management Sciences (LUMS), Pakistan (received full funding)

On going Research:

1. Applications of Signature Curves and Invariant Histograms in Computer Vision.
2. Book: Mathematics and Mechanics of Southern European Architecture.