
Contact Information

Address **Rm 638 Wachman Hall | 1805 N. Broad Street | Philadelphia, PA 19122.**
Phone **+1 832 498-6760.**
Email **ksoodha@temple.edu.**
Website **[http://math.temple.edu/~tua64429.](http://math.temple.edu/~tua64429)**

Personal Data

Place of Birth **Houston, Texas.**
Citizenship **United States of America.**
Marital Status **Single.**
Children **0.**

Education

2008-Present **Mathematics Ph.D. Candidate**, *Temple University, Philadelphia, PA.*
May 2010 **MA, Mathematics**, *Temple University, Philadelphia, PA.*
GPA: 3.83
May 2004 **BS, Mathematics and English Literature**, *Tulane University, New Orleans, LA.*
Magna Cum Laude

Dissertation

Adviser **Daniel B. Szyld.**
Title **Krylov Subspace Methods with Fixed Memory Requirements: Nearly Hermitian Linear Systems and Subspace Recycling.**

Work Experience

May 2011 - August 2011 **Graduate Research Internship (Mentor: Michael Parks)**, *Computer Science Research Institute, Sandia National Laboratory, Albuquerque, NM.*
May 2008 - May 2011 **Research Assistantship (Advisor: Daniel B. Szyld)**, *Temple University Department of Mathematics, Philadelphia, PA.*
May 2004 - July 2006 **Technical Writer and Editor**, *University of Texas Health Science Center Department of Cardiothoracic and Vascular Surgery, Houston, TX.*

Teaching Experience

Fall 2011 **College Algebra**, *Course Instructor, 4-Hour course.*
Fall 2008 **Calculus III**, *Teaching Assistant, Worked with students one-on-one.*
Fall 2008 **Calculus II**, *Teaching Assistant, Conducted recitations.*
Spring 2008 **Precalculus**, *Course Instructor, 4-Hour course.*
Fall 2007 **College Algebra**, *Course Instructor, 4-Hour course.*
Spring 2007 **Calculus III**, *Teaching Assistant, Worked with students one-on-one.*
Fall 2006 **Calculus I**, *Teaching Assistant, Worked with students one-on-one.*

Awards and Honors

- Spring 2012 **Dissertation Completion Fellowship**, *Temple University*, Philadelphia, PA.
January 2012 **Travel Award**, *Joint Mathematics Meeting 2012*, Boston, MA.
July 2011 **Travel Award**, *ICIAM 2011*, Vancouver, BC.
June 2011 **Travel Award**, *Householder Symposium 2011*, Tahoe City, CA.
March 2011 **Travel Award**, *SIAM Conference on Computational Science and Engineering*, Reno, NV.
2008-2011 **Research Assistantship**, *Temple University*, Philadelphia, PA.
2006-2008, 2011 **Teaching Assistantship**, *Temple University*, Philadelphia, PA.
2006-2008 **Dean's Graduate Scholarship**, *Temple University*, Philadelphia, PA.

Outreach

- Fall 2011 **Undergraduate Mathematical Modeling Competition**, *Mentor and judge*, Temple University, Philadelphia, PA.
Fall 2010 - Present **Grad Student Peer Resource**, *Resource for younger graduate students*, Temple University, Philadelphia, PA.

Research

Interests

Krylov Subspace Projection Methods, Low-rank Perturbations of Structured Systems, Multiple Shifted Linear Systems, Subspace Recycling, Data/Image Analysis, High Performance Computing and Algorithm Design.

Publications

- In Preparation **GMRES with Subspace Recycling for Sequences of Shifted Linear Systems**, *with Daniel B. Szyld and Fei Xue.*
In Preparation **Block Krylov Subspace Recycling for Acceleration of a Newton Iteration from Fluid Density Functional Theory**, *with Michael Parks and Daniel B. Szyld.*
Submitted **Short-Term Recurrence Krylov Subspace Methods for Nearly-Hermitian Matrices**, *with Mark Embree, Josef A. Sifuentes, Daniel B. Szyld, and Fei Xue.*
September 2010 **The Action of Hecke Operators on Hypergeometric Functions**, *with Sinai Robins and Victor Moll*, in the *Journal of the Australian Mathematical Society*, Volume 89. pp. 51-74
May 2004 **An Analysis of the Landen Transformation**, *Bachelor of Science Honors Thesis*, Advisor: Victor Moll, Tulane University.

Talks

- November 2011 **Block Krylov Subspace Recycling**, *Mid Atlantic Numerical Analysis Day*, Philadelphia, PA.
June 2011 **The Schur Complement Method for Nearly-Hermitian Linear Systems: An Effective Solver**, *Householder Symposium*, Tahoe City, CA.
February 2011 **Automated Drawing of Weather Fronts**, *Temple University Society for Undergraduate Mathematics Seminar*, Philadelphia, PA.
September 2010 **Automatic Weather Front Detection**, *Temple University Applied Math Seminar*, Philadelphia, PA.
July 2010 **A Schur Complement Approach for Solving a Nearly Hermitian System**, *SIAM Annual Meeting*, Pittsburgh, PA.
May 2010 **Automatic Weather Front Detection**, *Temple Applied Math Seminar*, Philadelphia, PA.
October 2009 **Properties of Progressive GMRES and Flexible Conjugate Gradients**, *Temple Applied Math Seminar*, Philadelphia, PA.

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October 2009 **Properties and Stability of Progressive GMRES**, *SIAM Conference on Applied Linear Algebra*,
Monterrey, CA.

Projects

Jan. 2010 – Dec. 2010 **Semi-automated Measurement of Aortic Diameter for Diagnosis of Aortic Aneurysm.**

Jan. 2010 – Present **Automatic Weather Front Detection**, *with Meredith Hegg and Benjamin Seibold.*

Software

In Progress **Weather Front Detection Software**, *with Meredith Hegg and Benjamin Seibold.*

Summer 2011 **Block GCRODR (Block GMRES with Recycling)**, *Matlab and Trilinos Implementations.*

Spring 2010 **Schur Complement Method (for nearly-Hermitian linear systems)**, *Matlab Serial and Parallel Implementations.*

Workshops

June 21–25, 2008 **SIAG/LA-SIMUMAT International Summer School on Numerical Linear Algebra**, *International Center for Mathematical Meetings*, Castro Urdiales, Cantabria, Spain.

July 20–28, 2010 **Industrial Mathematical and Statistical Modeling Workshop for Graduate Students**, *Center for Research in Scientific Computation*, Raleigh, NC, United States.

June 7–18, 2010 **2010 Gene Golub SIAM Summer School on Numerical Linear Algebra**, *Hotel Sierra Silvana*, Selva di Fasano, Bari, Italy.