

XIN YE

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POSITION

Postdoctoral Researcher

Sep 2018–Aug 2019

Department of Computer Science and Engineering

University of Minnesota, Minneapolis, MN.

Mentor: Yousef Saad.

EDUCATION

Ph.D. in Applied Mathematics

Aug 2013–Aug 2018

Purdue University, West Lafayette, IN, USA.

Advisor: Jianlin Xia.

B.S. in Applied Mathematics

Sep 2009–Jun 2013

B.S. in Economics

Wuhan University, Wuhan, Hubei, China.

RESEARCH INTERESTS

- Fast direct solvers, hierarchical matrices.
- Randomized numerical linear algebra, low-rank approximation.
- Filtering techniques for eigenvalue problems and preconditioning.
- High performance computing.

PUBLICATIONS AND PREPRINTS

Journal Articles

- X. Ye, J. Xia, R. H. Chan, S. Cauley, and V. Balakrishnan, *A fast contour-integral eigensolver for non-Hermitian matrices*, SIAM J. Matrix Anal. Appl., 38 (2017), pp. 1268–1297.
- J. Xia, Z. Li, and X. Ye, *Effective matrix-free preconditioning for the augmented immersed interface method*, J. Comput. Phys., 303 (2015), pp. 295–312.

Preprints

- X. Ye, Y. Xi, and Y. Saad, *Preconditioning via GMRES in polynomial space*, submitted, (2019).
- X. Ye, J. Xia, and L. Ying, *Analytical compression via proxy point selection and contour integration*, submitted, (2019).

AWARDS

- Purdue Research Foundation Grant Jun 2017–Jun 2018
- Department Student Travel Fund Oct 2015 & Feb 2017
- SIAM Student Travel Award to attend 2016 SIAM Annual Meeting Mar 2016

- Wuhan University Scholarship for Outstanding Students Oct 2010 & Oct 2011
- Wuhan University Scholarship for Outstanding Freshmen Sep 2009

TALKS AND PRESENTATIONS

Invited Presentations

- *A Fast Contour-integral Eigensolver and the Approximation Accuracy*
SIAM CSE17 Feb 2017
- *A Contour-integral Based Structured Eigensolver for Non-Hermitian Matrices*
SIAM AN16 Jul 2016

Contributed Talks

- *Complex Polynomial Preconditioner for Indefinite Systems*
Preconditioning 2019 Jul 2019
- *Kernel Matrix Compression with Proxy Points*
2018 Conference on Fast Direct Solvers Nov 2018
- *A Fast Eigensolver for Structured Matrices*
SIAM LA15 Oct 2015

PROFESSIONAL ACTIVITIES

Journal Reviewer

- Applied Numerical Mathematics
- Journal of Parallel and Distributed Computing
- SIAM Journal on Scientific Computing

Organizer

- Mini-symposium *Recent Advancements in Numerical Methods for Eigenvalue Computation* at ILAS 2017, co-organized with J. Vogel. Jul 2017

Mentor

- AWM Purdue Chapter mentoring program Feb 2016–Oct 2016

ATTENDED AND UPCOMING CONFERENCES

- Preconditioning 2019, Minneapolis, MN. Jul 1–3, 2019
- 2018 Conference on Fast Direct Solvers, Purdue CCAM, West Lafayette, IN. Nov 9–11, 2018
- Walter Gautschi's 90th birthday conference, Purdue University, West Lafayette, IN. Mar 30–31, 2018
- 15th Copper Mountain Conference on Iterative Methods, Copper Mountain, CO. Mar 25–30, 2018
- 2017 Meeting of the International Linear Algebra Society, Ames, IA. Jul 24–28, 2017
- Computational Science and Engineering Student Conference, West Lafayette, IN. Apr 14, 2017
- SIAM Conference on Computational Science and Engineering, Atlanta, GA. Feb 27–Mar 3, 2017

- Workshop on Fast Direct Solvers, Purdue CCAM, West Lafayette, IN. Nov 12–13, 2016
- 2016 SIAM Annual Meeting, Boston, MA. Jul 11–15, 2016
- Computational Science and Engineering Student Conference, West Lafayette, IN. Apr 8, 2016
- SIAM Conference on Applied Linear Algebra, Atlanta, GA. Oct 26–30, 2015
- Multi-resolution Interactions Workshop, Duke University, Durham, NC. Aug 28–29, 2015

TEACHING

At Purdue

- Analytic Geometry and Calculus I (MA 165), Recitationer, Fall 2016.
- Introduction to Discrete Mathematics (MA 375), Grader, Summer 2015.
- Linear Algebra with Applications (MA 511), Grader, Fall 2014.
- Linear Algebra (MA 265), Grader, Spring 2014.
- Introduction to Real Analysis (MA 341), Grader, Fall 2013.

SKILLS

Languages	Mandarin Chinese (native), English (fluent)
Computing skills	Matlab, Fortran, MPI, OpanACC, C, C++