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Contact Information

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Professional Preparation

2000	Ph.D. (Mathematics)	Louisiana State University
2000	Ph.D. (Computer Science)	Louisiana State University

Academic/Professional Appointments

April, 2001--July 200l	Visiting Assistant Professor, Department of Computer Science, Illinois Institute of Technology
Sep. 2001 -- Aug. 2007	Assistant Professor of Computer Science, Texas Tech University
Sep. 2007 -- Present	Associate Professor of Computer Science, Texas Tech University

Funded Research

- *Collaborative Research: SEIDD — Scalable Domain Decomposition Algorithms for Solving Parabolic Problems*. National Science Foundation. Investigator: Yu Zhuang. Sep. 2003 – Aug. 2005. $45,371.
- *Computer Simulation of Chemical Dynamics*. National Science Foundation. Investigators: William L. Hase and Yu Zhuang. Aug. 2006 – Jul. 2009. $426,000.
- PIRE: Simulation of Electronic Non-adiabatic Dynamics for Reactions with Organic Macromolecules, Liquids, and Surfaces. National Science Foundation. Sep. 2007 – Sep. 2012. $500,000 per year.

Publications

- K. Prashant, Yu Zhuang, U. Lourderaj, and W.L. Hase, "A Grid-based Cyber infrastructure for High Performance Chemical Dynamics Simulations", Proc. *4th International Conference on Cybernetics and Information Technologies, Systems and Applications*, Orlando, Florida, July, 2007.
- U. Lourderaj, K. Song, T.L. Windus, Yu Zhuang, and W.L. Hase, "Direct dynamics simulations using Hessian-based predictor-corrector integration algorithms", *Journal of Chemical Physics*, Vol.126, January 2007, 044105.
- Yu Zhuang, "An alternating explicit implicit domain decomposition method for the parallel solution of parabolic equations", *Journal of Computational & Applied Mathematics*, Vol.206, 549–566, 2007.
- Yu Zhuang, "A parallel and efficient algorithm for multi-compartment neuronal modelling", *Neurocomputing*, Vol. 69, June 2006, 1035-1038.
- Yu Zhuang and X.-H. Sun, "A highly parallel algorithm for the numerical simulation of unsteady diffusion processes", *Proc. 19th IEEE International Parallel & Distributed Processing Symposium (IPDPS 2005)*, Denver, Colorado, April, 2005.
- Yu Zhuang and X.-H. Sun, "Stabilized explicit-implicit domain decomposition methods for the Numerical Solution of parabolic equations", *SIAM Journal of Scientific Computing*, Vol.24, July, 2002, 335-358.

- Yu Zhuang and X.-H. Sun, "Stable, globally non-iterative, non-overlapping domain decomposition parallel solvers for parabolic problems", *Proc. IEEE/ACM Conf. High Performance Networking & Computing (a.k.a. Super Computing Conference)*, Denver, November 2001.
- Yu Zhuang and X.-H. Sun, "A high order fast direct solver for singular Poisson equations", *Journal of Computational Physics,* Vol.171 (2001), 79-94.
- S. Flory, F. Neubrander, and Y. Zhuang, "On the regularization and stabilization of approximation schemes for C(0)-semigroups", *Partial Differential Equations and Spectral Theory*, 119-132. Birkhaeuser Verlag, 2000.
- Yu Zhuang and X. Sun, "A high-order ADI solver for separable generalized Helmholtz equations", *Advances in Engineering Software,* Vol.31 (2000), 585-591.
- Y. Zhuang and X. Sun, "A domain decomposition based parallel solver for time dependent differential equations", *Proc.9th SIAM Conf. Parallel Processing for Scientific Computing,* San Antonio, Texas, 1999.
- P. Wolenski and Yu Zhuang, "Proximal Analysis and the Minimal Time Function", *SIAM Journal on Control and Optimization.* Vol.36 (1998), 1048-1072.
- X.-H. Sun and Yu Zhuang, "A highly accurate fast solver for Helmholtz equations", *Proc. ACM International Conference on Supercomputing (ICS),* Vienna, Austria, 1997.
- X.-H. Sun and Yu Zhuang, "A high-order direct solver for Helmholtz equations with Neumann boundary conditions", NASA ICASE Technical Report No. 97-11, Institute for Computer Applications in Science and Engineering, NASA Langley Research Center, Hampton, VA 23681, February, 1997.

Services to The Scientific Community

- Served on program committees of
  - the IASTED International Conference on Parallel and Distributed Computing and Networks (PDCN), February, 2008
  - the IASTED International Conference on Parallel and Distributed Computing and Networks (PDCN), Innsbruck, Austria, February, 2007.
  - the 11th ISPE Conference on Concurrent Engineering, Beijing, China, July, 2004;
  - Workshop on Hardware/Software Support for Parallel and Distributed Scientific and Engineering Computing (SPDSEC-02), Charlottesville, Virginia, 2002. Conference program committee website: http://people.stfx.ca/lyang/activities/pact02-spdsec/cfp.html#committee
- Refereed for journals including
  - Journal of Parallel and Distributed Computing,
  - Journal of Computational and Applied Mathematics,
  - Applied Numerical Methods,
  - Numerical Methods for Partial Differential Equations,
  - Applied Mathematics Letters.
- Refereed for conferences including
  - IEEE/ACM Conference on High Performance Networking & Computing (a.k.a. the Super Computing Conference 2004)
  - IEEE International Parallel and Distributed Processing Symposium (IPDPS) 2004,
  - 5th International Conference on High Performance Computing in the Asia-Pacific Region, September, 2001, Gold Coast, Queensland, Australia.
  - International Conference on Parallel and Distributed Computing Systems (PDCS '98)
  - International Conf. Parallel & Distributed Processing Techniques and Applications (PDPTA '98)