



## Current student advisees

1 Ph.D. student · 4 M.S. students

## Past M.S. theses/projects

Kishor Joshi (2007) *Testing and maintenance of ConcurrentMentor*

Øystein Thorsen (2006) *Automated verification of UPC memory consistency*

Kohinoor (Lisa) Begum (2005) *UPC collective conformance suite*

Abu Ashraf (2004) *Design and use of instruments for the measurement of software usefulness*

Parul Mishra (2004) *Bridging the software requirements-architecture gap*

Beena More (2004) *Statechart Diagram Executor*

Ravish Mehta (2004) *PFEedit: A graphical editor for Problem Frame diagrams*

William Kuchera (2003) *Illuminating the UPC memory model*

Varsha Awhad (2002) *A unified formal specification and analysis of the new Java memory models*

Yongsheng Huang (2002) *An investigation of the UPC memory model*

## Other student advising

6 M.S. advisees under “coursework” option

Ph.D. committees: 10 completed, 2 current

M.S. committees: 24 completed, 1 current

Faculty Advisor, Software Engineering Program (2004–present)

Faculty Advisor, Phi Kappa Theta fraternity (2008–present)

## University service

Facilitator, Diversity Literacy Workshops (2011–present)

Working Group: Undergraduate Communication Goals (2011–present)

Senate Academic Policy Committee (2010–present)

University Senate, alternate (2007–present)

University Assessment Committee (2006–present)

CS Promotion, Tenure & Reappointment Committee (2006–present)

Reading as Inquiry program (2004–present)

CS Undergraduate Committee (2001–present)

Software Engineering Degree Committee (2000–present)

Search Committee, Dean of College of Sciences & Arts (2007–2008)

Search Committee, CS Assistant Professor position (2006)

Search Committee, CS Lecturer position (2004)

CS Living Community mentor (2003–2005)

Faculty advisor, Husky Game Enterprise (2006–07)

Faculty advisor, Aerospace Enterprise (2003–2005)

Reviewer, Summer Undergraduate Research Fellowship program (2006)

Reviewer, UN 2001 course evaluation (2006)

## Invited presentations

Universidad Catolica del Maule, Talca, Chile (2010)

Eaton Corporation, Milwaukee, WI (2005)

Hewlett Packard, Nashua, NH (2004)

UPC Developers’ Workshop, Washington, DC (2003)

## Reviewing

*ACM Computing Reviews* (2011–present)  
ASM, B and Z (ABZ) Conference (2008–2009)  
John Wiley & Sons, Inc. (2008)  
*Journal of Universal Computer Science* (2007)  
IGI Global (2007)  
*Formal Aspects of Computing Science*, British Computer Society (2007)  
Symposium on Theoretical Aspects of Computer Science (STACS) (2007)  
ACM SIGCSE Conference on Computer Science Education (2007)  
*IEEE Software* (2006)  
International Conference on Formal Engineering Methods (ICFEM) (2005)  
Parallel and Distributed Systems: Testing and Debugging (PADTAD) (2005)  
NSF Research Experiences for Undergraduates (REU) Sites program (2005)  
Abstract State Machine Conference (2004–2007)  
ACM Symposium on Applied Computing (SAC) (2003–2004)  
Textbook reviews, Addison-Wesley Publishing Co. (2003–2006)

## Other activities

Workshop participant and contributor, “Incorporating Communication Outcomes into the Computer Science Curriculum”, Oxford OH and Raleigh NC (2010–2012)  
Fulbright Scholar, Pontificia Universidad Catolica de Chile, Santiago, Chile (2010)  
Workshop organizer, “Teaching Communication Skills in the Software Engineering Curriculum: A Forum for Professionals and Educators”, Oxford OH (2008)  
Workshop organizer, “Teaching Communication Skills in the Software Engineering Curriculum”, Conference on Software Engineering Education & Training (CSEET), Charleston SC (2008)  
Program Committee, ASM, B and Z (ABZ) Conference (2007–2008)  
Workshop participant and contributor, Network Community for Software Engineering Education (SWENET), Milwaukee WI (2005)  
Steering Committee, Abstract State Machine Conference (2005–2007)  
Program Committee, International Conference on Formal Engineering Methods (ICFEM) (2005)

## Funding proposals under review

(PI) Pan-American Software Quality Institute. With L. Ott. Pan American Advanced Studies Institutes, National Science Foundation, 2011–2012. \$99,520.

(Co-PI) Digital Inclusion: Bridging the digital divide in low-income or geographically isolated communities. With A. Oliveira (PI). US-Brazil Higher Education Consortia, U.S. Department of Education, 2011–2015. \$285,174.

(Co-PI) Constructing a multidisciplinary human centered design experience. With R. Pastel (PI), K. Kitalong, P. Ward, L. Davis. Transforming Undergraduate Education in STEM (TUES), National Science Foundation, 2012–2014. \$199,240.

## Funded projects

(Co-PI) Environmental cybercitizens: Engaging citizen scientists in global environmental change through crowdsensing and visualization. With A. Mayer (PI), R. Donovan, R. Pastel, S. Oppliger. Cyberinfrastructure-TEAM (CI-TEAM), National Science Foundation, 2011–2013. \$249,840.

(PI) The software communication Chautauqua. With P.V. Anderson, J. Burge and M. Seigel. CISE Pathways to Revitalized Undergraduate Computing Education (CPATH), National Science Foundation, 2007–2008. \$66,595.

(PI) Course development: Safety critical software development using C. GE Aviation, 2007. \$19,859.

(PI) Speaking of software: Integrating communication and documentation techniques into an undergraduate Software Engineering curriculum. With M.A. Brady and R.R. Johnson. CISE Combined Research and Curricular Development and Educational Innovation Program (CRCD/EI), National Science Foundation, 2004–2007. \$313,249.

NSF Research Experience for Undergraduates (REU), 2005. \$6,000.

(Co-PI) UPC technology development projects. With S. Seidel (PI) and P. Merkey. U.S. Department of Defense, 2003–2005. \$754,740.

(Co-PI) UPC technology development. With S. Seidel (PI) and P. Merkey. Hewlett-Packard Corporation, 2002–2003. \$189,558.

(PI) Pedagogical tools for Abstract State Machines. Microsoft Research, 2002–05. \$32,500.

## Refereed publications

Understanding relaxed memory consistency through interactive visualization (Tool Demo). With O. Thorsen. ASM Symposium on Software Visualization (SOFTVIS), Salt Lake City, 2010.

Abstract State Machines and the inquiry process. With J.K. Huggins. In A. Blass, N. Dershowitz and W. Reisig (eds.), *Fields of Logic and Computation*. Lecture Notes in Computer Science 6300, 2010.

Making and acting: Ethnographic development of a case study approach. With M. Seigel and T. Vosecky. *Technical Communication*, 55(4), 2008.

Speaking of software: Case studies in software communication. With A. Brady, M. Seigel and T. Vosecky. In H.J.C. Ellis, S.A. Demurjian and J.F. Naveda (eds.), *Software Engineering: Effective Teaching and Learning Approaches and Practices*. IGI Global, 2008.

Addressing communication issues in software development through case studies. With A. Brady, M. Seigel and T. Vosecky. Conference on Software Engineering Education & Training (CSEET), Dublin, Ireland, 2007.

RFID cards: A new deal in accessibility for the elderly. With R. Pastel and J. Heines. International Conference on Human-Computer Interaction (HCII), Beijing, China, 2007.

Automated verification of UPC memory consistency. With Oystein Thorsen. Workshop on Verified Software: Theories, Tools, Experiments (VSTTE), Seattle, WA, 2006.

The intersecting futures of Technical Communication and Software Engineering: Forging a multi-disciplinary alliance. With M.A. Brady and R.R. Johnson. *Technical Communication* 53(3), 2006.

Can Abstract State Machines be useful in language theory? With Y. Gurevich and M. Veanes. *Developments in Language Theory (DLT)*, Santa Barbara, CA, 2006. Springer LNCS 4036.

Student-based case studies in software communication. With T. Vosecky, L. Steinbacher, A. Mareck, R.R. Johnson and A. Brady. *Conference on Software Engineering Education and Training (CSEET)*, Kahuku, Oahu, Hawaii, 2006 (short paper).

A course in problem analysis and structuring through Problem Frames. With X. Wang and V. Bluth. *Conference on Software Engineering Education and Training (CSEET)*, Kahuku, Oahu, Hawaii, 2006.

Incorporating and compensating: Some challenges of interdisciplinary research on programs inside and outside of technical communication. With A. Brady, R.R. Johnson and T. Vosecky. *Council for Programs in Technical and Scientific Communication Conference (CPTSC)*, Lubbock, TX, 2005.

*UPC Language Specifications V. 1.2*, § 5.1.2.3 (Program execution) and § B (Formal UPC memory consistency semantics). With D. Bonachea and K. Yelick. UPC Consortium, 2005. Available at [<http://www.upc.gwu.edu>].

The UPC memory model: Problems and prospects. With W. Kuchera. *International Parallel and Distributed Processing Symposium (IPDPS)*, Santa Fe, NM, 2004.

A unified formal specification and analysis of the new Java memory models. With V. Awhad. In *Abstract State Machines 2003: Advances in Theory and Applications*, Springer LNCS 2589, 2003.

Teaching ASMs, teaching with ASMs: Opportunities in undergraduate education. With J.K. Huggins and J. Mayo. In *Abstract State Machines 2003: Advances in Theory and Applications*, Springer LNCS 2589, 2003 (short paper).

On the tamability of the Location Consistency model. With G. Tremblay and J.N. Amaral. *International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA)*, Las Vegas, NV, 2002.

An Abstract State Machine specification and verification of the Location Consistency memory model and cache protocol. With G. Tremblay and J.N. Amaral. *Journal of Universal Computer Science* 7(11), 2001.

Investigating Java concurrency using Abstract State Machines. With Y. Gurevich and W. Schulte. In *Abstract State Machines: Theory and applications*, Springer LNCS 1912, 2000.

Formalizing database recovery. With Yuri Gurevich and Nandit Soparkar. *Journal of Universal Computer Science* 3(4), 1997.

Supervisory control of workflow scheduling. With Paul Jensen and Nandit Soparkar. *Advanced Transaction Models & Architectures Workshop (ATMA)*, Goa, India, 1996.

Revisiting spheres of control: an approach to advanced recovery. With Nandit Soparkar. *Advanced Transaction Models & Architectures Workshop (ATMA)*, Goa, India, 1996.

Formalizing recovery in transaction-oriented database systems. With Y. Gurevich and N. Soparkar. *Conference on Management of Data (COMAD)*, Pune, India, 1995.

The semantics of the C++ programming language. In *Specification and Validation Methods*, ed. E. Boerger, Oxford University Press, 1995.

## **Other publications**

UPC Collective Conformance Suite. With L. Begum. Technical Report 06-01, Computer Science Dept., Michigan Technological University, 2006.

A proposal for a UPC memory consistency model. With K. Yelick and D. Bonachea. Technical Report, Lawrence Berkeley National Laboratory, 2003.

An Abstract State Machine primer. With J.K. Huggins. Technical Report 02-04, Computer Science Dept., Michigan Technological University, 2002.

Specification and verification of the Windows Card runtime environment using Abstract State Machines. With Y. Gurevich. Technical Report MSR-TR-99-07, Microsoft Research, 1999.

The semantics of the Java programming language: Preliminary version. Technical Report CSE-TR-355-97, University of Michigan, 1997.

*Last update: 22 June 2011*