

Shreya Kumar

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Computer Science and Engineering,
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EDUCATION

Ph.D., Computer Science

Michigan Technological University (2016)

M.S., Computer Science

Michigan Technological University (2013)

B.E., Computer Engineering

University of Pune, India (2007)

RESEARCH INTERESTS

- Communication, software development and process.
- Undergraduate education – incorporating the flipped classroom model and POGIL based learning into the capstone project be a more authentic simulation of industry
- Diversity in computing – new approaches to the recruitment and retention of women in computing
- HCI and senior citizens — understanding user adoption and usability challenges faced by senior citizens learning and using technology
- Exploratory testing — teaching using the problem frames approach to describe methodology for exploratory testing

TEACHING EXPERIENCE

University of Notre Dame

CSE 30331/34331- Data Structures (FALL '16)

Michigan Technological University

CS 3141- Team Software Project (SPR, FALL '14)
CS 1122 - Introduction to Programming II (SPR, SUM '12, SUM '13, SUM '14)
CS 1121 - Introduction to Programming I (SUM '11)
Summer Youth Programs - Women in Computer Science (SUM '13, SUM '14)
Summer Youth Programs - Computer Science for Women in Engineering (SUM '12)
Summer Youth Programs - Designing for Humans – HCI and Usability (SUM '12, SUM '14)
Summer Youth Programs - HCI Project (SUM '12)
Summer Youth Programs – Computer Science (SUM '12)

GRANTS

Charles Wallace (PI), Shreya Kumar (co-PI) and Leo C. Ureel II (co-PI). "Agile communicators: Preparing students for communication-intensive software development through inquiry, critique and reflection" National Science Foundation, Division of Undergraduate Education, *Improving Undergraduate STEM Education (IUSE) Program* (\$218,735, 2015-16)

REFEREED PUBLICATIONS

Kumar, Shreya and Charles Wallace, "A tale of two projects: A pattern based comparison of communication strategies in student software development," in proceedings of the *2013 IEEE Frontiers in Education Conference*, 2013, pp. 1844–1850.

Kumar, Shreya and Charles Wallace, "Instruction in software project communication through guided inquiry and reflection," in *proceedings of the IEEE Frontiers in Education Conference*, IEEE, 2014.

Kumar, Shreya, Leo C. Ureel II and Charles Wallace "Agile Communicators: Cognitive Apprenticeship to Prepare Students for Communication-Intensive Software Development," in proceedings of Agile 2015, Washington DC, August (In Press)

Wallace, Charles and Shreya Kumar, "Engaging Software Engineering Students in Communication Design through a Pattern Language" at the *International Writing Across the Curriculum Conference*, Minneapolis, MN, June 2014.

Kumar, Shreya and Charles Wallace, "Communication Strategies for Mentoring in Software Development Projects," in *Proceedings of the 7th International Workshop on Cooperative and Human Aspects of Software Engineering*, New York, NY, 2014, pp. 111–114.

Wallace, Charles and Shreya Kumar, "Communication Patterns: A Tool for Analyzing Communication in Emerging Computer Science Educational Practices (Abstract Only)," in *Proceeding of the 44th ACM Technical Symposium on Computer Science Education*, New York, NY, 2013, pp. 729–729.

Kumar, Shreya and Linda Ott, "Encouraging Talented High School Girls toward a Career in Computing through a Broader Understanding of the Field", in *proceedings of the 121st ASEE Annual Conference*, June 2014.

Kumar, Shreya, Leo C. Ureel II, Harriet King, and Charles Wallace, "Lessons from our elders: Identifying obstacles to digital literacy through direct engagement," in *proceedings of the PETRA'13*, May 29-31, 2013, Rhodes, Greece, pp. 1–8.

Kumar, Shreya and Charles Wallace, "Patterns of Inquiry in Computer Literacy Help Sessions for the Elderly," in *Proceedings of the 6th International Conference on Pervasive Technologies Related to Assistive Environments*, New York, NY, USA, 2013, pp. 54:1–54:2.

Kumar, Shreya and Charles Wallace, "Guidance for exploratory testing through problem frames," in *2013 IEEE 26th Conference on Software Engineering Education and Training (CSEE T)*, 2013, pp. 284–288.

Kumar, Shreya Jason Sterkenburg, Jed Diekfuss, and Myoungsoon Jeon. "Color effects on students' emotions and task performance in a web-based learning management system," in *proceedings of the 1st International Conference on Multimedia and Human Computer Interaction (MHCI '13)*, Toronto, Canada, 2013, pp. 1-3.

INDUSTRY EXPERIENCE

From 2007–2010, I worked as a business analyst contractor in the telecom domain to British Telecommunications, plc (BT), UK, including:

Tech Mahindra, Ltd. (Belfast, Northern Ireland) Mar 2009–Jul 2010

Technical Business Analyst and Design Consultant

- Lead business analyst and business solution design consultant for new product launches, managing customer expectations and liaising with British Telecom clients
- Project lead for an international team of over 70 experienced software engineers and support crew

Tech Mahindra, Ltd. (London, UK & Pune, India) Jul 2009–Feb 2010

Technical Business Analyst

- Technical lead and on-site coordinator for requirement capture and change management for products, including PSTN Broadband, FTTC, FTTP, VoIP, IPTv, and mobile telephony
- Oracle-certified Siebel 7.7 Business Analyst

As part of my PhD research, I worked as an intern at an Agile software development company to perform participant observation of software development.

ThermoAnalytics Inc. (Calumet, MI) Jan 2015–Aug 2015

Software Development Intern

- Scrum team member and a Kanban team member on thermal imaging and diagnostics software development and maintenance teams.

SERVICE

- Vice-president, Graduate Student Government, Michigan Tech ('13–'14)
- President, Computer Science Honor Society, Upsilon Pi Epsilon ('13)
- President, Humane Interface Design Enterprise, Michigan Tech ('12)
- Public Relations Chair, Graduate Student Government, Michigan Tech ('12–'13)
- Member, Women in Computing Sciences, Michigan Tech ('11–'13)
- Volunteer Tutor, Online at the Library Program for Seniors Learning Computers ('11–'14)

AWARDS & HONORS

- Presidential Council of Alumnae's *Woman of Promise Award* in Computer Science ('11)
- *Graduate Student Service Award* ('12)
- NSF Travel Award to participate in the Pan American Software Quality Institute (PASQI) workshop 2013, Costa Rica
- NSF Doctoral Consortium Travel Award to participate in the Pervasive Technologies and Research in Assistive Environments (PETRA) Conference 2013, Rhodes Island, Greece
- Scholarship for attending the Grace Hopper Conference for Women in Computing('15)