

Jaymie Strecker

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Education

M.S., Computer Science, University of Maryland, GPA 3.71 (2006)

B.A., Computer Science and Mathematics, College of Wooster, GPA 3.97 (2004)

Honors

Dean's Fellowship, University of Maryland (2008)

Summer Graduate Research Fellowship, University of Maryland (2008)

Verizon Graduate Fellowship, University of Maryland (2004)

National Physical Sciences Consortium Graduate Fellowship (2004)

William H. Wilson Prize in Mathematics, College of Wooster (2004)

Elizabeth Sidwell Wagner Prize in Mathematics, College of Wooster (2003)

Phi Beta Kappa (2003)

Languages and Environments

Used extensively in industry/research/teaching: Java, C++, Perl, HTML, Bash, L^AT_EX; Emacs, Xcode, NetBeans; UNIX, Mac OS X

Used less extensively: C, MySQL, Matlab, R, PHP, CSS, Haskell, O'CamL, Lisp, ACL2, Graphviz; Eclipse; Windows XP

Software and Technology Experience

Research Assistant

Atif M. Memon, University of Maryland

Dec. 2005–present

Researched software defects and their detectability by graphical-user-interface (GUI) testing to help researchers study software testing more scientifically and develop better defect-detection techniques. Designed and carried out empirical studies, which entailed using and improving the GUITAR software project (200 Java files) written by group members, developing tools to run GUI test cases on a cluster and validate the results, and automating the analysis of large amounts of data. To accomplish this, wrote over 11000 lines (counting documentation) of Bash and Perl and over 2800 lines of Java. Self-trained in principles and practice of statistical data analysis using the R software environment. Published articles and gave presentations to communicate research ideas and results, and helped edit and improve other group members' articles and presentations. Collaborated with group members to peer-review articles for publication. Collected and documented tools and data from group members to share on a Web site of testing benchmarks.

J. Strecker and A. M. Memon. Testing Graphical User Interfaces. *Encyclopedia of Information Science and Technology*, 2nd ed. IGI Publishing, 2008.

J. Strecker and A. M. Memon. Relationships between test suites, faults, and fault detection in GUI testing. *Proc. First IEEE International Conference on Software Testing, Verification and Validation*, 2008.

J. Strecker and A. M. Memon. Faults' context matters. *Proc. Fourth International Workshop on Software Quality Assurance*, 2007.

J. Strecker. An empirical evaluation of test adequacy criteria for event-driven programs. M. S. Scholarly Paper, University of Maryland, 2006.

Intern

National Security Agency

May 2005–Aug. 2005

Assessed the usability of an interactive verification-condition generator under development by testing from the point of view of an “expert user”. Became an expert user by self-training on the underlying principles of verification-condition generators and the use of the ACL2 theorem prover. Wrote the first documentation of the whole system.

Independent-Study Student

William Pugh, University of Maryland

Jan. 2005–May 2005

Explored methods to discover interesting patterns in software development by analyzing source code, test results, FindBugs warnings, and other data across successive versions. Designed and implemented (15 Java files) several variations of an algorithm for tracking similar lines of source code across versions.

J. Spacco, J. Strecker, D. Hovemeyer, and W. Pugh. Software repository mining with Marmoset: an automated programming project snapshot and testing system. *Proc. International Workshop on Mining Software Repositories, 2005.*

Research Assistant

Victor Basili, University of Maryland

Aug. 2004–May 2005

Developed methods to understand how programmers’ time is spent in various tasks (such as coding and debugging) by analyzing source-code changes and other data. Created and evaluated a tool (14 Java files) to identify the task associated with a source-code change. To better understand low-level data, built graphical models, using Perl and Graphviz to partially automate the process. Designed and implemented a MySQL database to store the group’s experimental data in a standard format. Evaluated the group’s data-collection methods and suggested improvements to better meet the group’s goals.

Software Developer

College of Wooster

Nov. 2002–Jul. 2003

Created a Java application (16 Java files) that automates the assignment of students to First-Year-Seminar sections using an optimization algorithm, reducing the task from 240 staff hours to less than 30 machine minutes. Met with users at project milestones to demonstrate the application and solicit feedback. To better serve users, expanded the original version to include a user-friendly graphical interface, customizability of data fields, and a user’s manual.

J. Strecker, J. Breitenbucher, and D. Byrnes. The simulated annealing group assignment (SAGA) application. *Proc. Midstates Conference for Undergraduate Research in Computer Science and Mathematics, 2003.*

Software Developer

Prentke-Romich Co. and Coll. of Wooster

May 2004–Nov. 2004, May 2003–

Jul. 2003, May 2002–Jul. 2002

With a small team and then independently, developed the Performance Report Tool (PeRT), a Java application (42 Java files) to help speech-language pathologists annotate and analyze logs from communication devices. Communicated regularly with customers (experts on the communication devices) to define and prioritize requirements. Implemented complex features, including a limited-day trial version of the application. Self-trained in Java Swing. Wrote documentation for users and for future developers of PeRT.

With a small team, created a “self-study” Web site to allow customers to create and administer online courses. Researched costs and benefits of existing commercial and non-commercial courseware systems relative to customers’ requirements. Extended an open-

source system implemented with PHP and MySQL. Self-trained in PHP and MySQL.

Senior Consultant

User Services, College of Wooster

Feb. 2002–May 2004

Provided faculty, staff, and students with computer support, including software and hardware installation and software troubleshooting. Helped train other consultants in customer service and software troubleshooting.

Consultant

User Services, College of Wooster

Aug. 2001–Feb. 2002

Provided computer support by phone to faculty, staff, and students to resolve technical issues. Developed customer-service and software troubleshooting skills through training sessions and experience.

Teaching Experience

Visiting Instructor of Computer Science

College of Wooster

Jan. 2009–May 2010

Taught required courses for computer-science majors on computer programming and data structures (CS2), programming languages and compilers, and computer organization. Created and taught a unique course on software quality. In all courses, provided frequent opportunities during class for collaborative, hands-on learning. Advised a student in Independent Study, a research project required of all senior students.

Algebra Tutor

Greenbelt CARES

Jan. 2007–May 2007

Worked one-on-one with a high-school student to improve her understanding of algebra and her performance in class by helping with homework assignments and supplementing classroom instruction.

Teaching Assistant

Center for Talented Youth

Jun. 2006–Jul. 2006

Assisted in instructing students one-on-one, planning lessons, and preparing assignments for a course in data structures and algorithms designed to challenge gifted middle-school and high-school students.

Computer-Lab Tutor

Special Needs Library

Feb. 2005–Sep. 2006

Using assistive technology and educational software, helped library patrons with physical or learning disabilities achieve their self-set goals.

Teaching Assistant

Denise Byrnes, College of Wooster

Sep. 2003–Nov. 2003

Guided undergraduates in implementing Java programming projects for a course in algorithms and data structures.

Advanced-Study Tutor

Harmar Elementary School

Sep. 1999–May 2000

Designed lesson plans and taught advanced topics to small groups of gifted students. Using multi-sensory techniques and encouraging active participation, introduced above-grade-level math topics to fifth-graders and Spanish to third-graders.

Service

Member of Rainbow Terrapin Network (2007–2009)

Peer reviewer for more than 10 conferences and publications, including IEEE Transactions on Software Engineering, Journal of Systems and Software, and Journal of Software Testing, Verification, and Reliability (2006–2009)

Organizer of activities, website, and wiki for women in department (2005–2008)

Peer mentor for graduate students in department (2007–2008)

Department coordinator for Maryland Teachers and Researchers (2007–2008)

Member of Graduate Council and Programs, Courses, and Curricula Committee (2007–2008)

Organizer of panel at graduate student orientation for department (2007–2008)

Author of diversity statement for department (2008)

Organizer of “Report Back from CRA Academic Careers Workshop” talks in department (2008)

Organizer of Association for Women in Computing booth at National Air and Space Museum’s Girl Scout Day (2008)

Panelist at Association for Women in Computing meeting (2007)

Member of hiring committee for graduate coordinator for department (2007)

Member of committee to help plan graduate student orientation for department (2007)

Panelist at graduate student orientation for department (2006)