Joseph Lawrance

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Teaching

Taught C, Compilers, Computer Architecture, Data Structures, Human-computer interaction, Java, Object-oriented programming, and Software Engineering.
Streamlined Wentworth's Computer Science major from 141 to 128 credits; introduced CS minor.
Mentored undergraduate researchers (Kyle Rector, Andrew Stucky, Nick Schultz, Mizuki Kagaya).
Mentored undergraduate work study students (Ben Greenier and Mike Spallino).
Tutored students in Calculus, Computer Science and Statistics.

Research

Co-authored over a dozen peer-reviewed publications (G-index: 8, H-index 5).
Co-chaired PPIG 2010; served on the Program Committee for DEFECTS 2008.
Empirically studied professional programmers in the lab (twice) and in the field (for seven months).
Gave invited talks at Harvard University, Brown University, Massachusetts Institute of Technology, Universidad Carlos III de Madrid, University of Nebraska-Lincoln, and Westfield State College.
Reviewed paper submissions for ACM CHI 2008-2014, IEEE ISI 2011-2012.
Started `http://apiusability.org`.

Programming

Java: Refactored Logisim, wrote a parser combinator library, a programmer navigation gathering Eclipse plugin, a spreadsheet testing/fault-localization tool, and a Japanese-English search engine.
Python: Wrote a Sudoku solver, an SDL Sokobon puzzle game, and a Brainf— compiler.
C/C++: Wrote an SVG viewer, and a turn-based trading game (Hiloto's Flowers).
XSLT: Wrote a web to MediaWiki script, an XML diff tool, and a Cocoon-based web-site rewriter.
Perl: Wrote a catering reservation web application.
PHP: Improved cWeed to deploy economic games to Mechanical Turk.
Ruby: Replaced Logisim's build script using Buildr.
Haskell: Added Perl regex syntax support to Java's grammar using Parsec.

Honors and Awards

AFOSR grant and NSF supplement from 2009-2012.
IBM Invention achievement award, 2009.
IBM Ph.D. Scholarship, 2008-2009.
Best paper award honorable mention, ACM CHI 2008.

Employment

Assistant Professor, Wentworth Institute of Technology, Boston, MA. September 2010-Present
Postdoctoral Associate, Massachusetts Institute of Technology. September 2009-August 2010
Research Assistant, Oregon State University. June-September 2004, June 2005-June 2009
Intern, IBM Research, Hawthorne, NY. June 2006-November 2008
Instructor, Oregon State University. June-August 2008
Teaching Assistant, Oregon State University. September-December 2004, March-June 2005
Intern, Microsoft. January-March 2005
Intern, American Airlines Federal Credit Union. June-September 2002, June-September 2003
Web Developer, Lawrence University, Appleton, WI. June-September 2001
Tutor, Lawrence University, Appleton, WI. April 2000-June 2003

Education

Ph.D., Computer Science, Oregon State University. 2009
Dissertation: Information foraging in debugging.
M.S., Computer Science, Oregon State University. 2005
Thesis: How well do professionals test with code coverage visualizations? An empirical study.
B.A., Math & Computer Science, Lawrence University, Appleton, WI. 2003
Minor: Psychology

Referees

Margaret Burnett, Professor, School of EECS, Oregon State University.	(541) 737-2539
Rachel Bellamy, Manager, Software Productivity Group, IBM Research.	(914) 784-7587
Rob Miller, Associate Professor, User Interface Design Group, MIT CSAIL.	(617) 324-6028

Journal and Magazine Articles

1. Fleming, S., Scaffidi, C., Piorkowski, D., Burnett, M., Bellamy, R., Lawrance, J. and Kwan, I. An Information Foraging Theory Perspective on Tools for Debugging, Refactoring, and Reuse Tasks, ACM Transactions on Software Engineering and Methodology (to appear 2013).
2. Jung, S. and Lawrance, J. Web Information Retrieval and Filtering course to Undergraduates using Open Source Programming. ACM Inroads Magazine. Volume 2 Issue 3, September. New York, NY: ACM Press. 2011.
3. Lawrance, J., Bogart, C., Burnett, M., Bellamy, R., Rector, K. and Fleming, S. How Programmers Debug, Revisited: An Information Foraging Theory Perspective, IEEE Transactions on Software Engineering, Volume 39 Number 2, February 2013.
4. Ko, A. J., Abraham, R., Beckwith, L., Blackwell, A., Burnett, M., Erwig, M., Lawrance, J., Scaffidi, C., Lieberman, H., Myers, B., Rosson, M. B., Rothermel, G., Shaw, M. and Wiedenbeck, S. The State of the Art in End-User Software Engineering, ACM Computing Surveys 43(3), Article 21, April 2011.
5. Dagit, J., Lawrance, J., Neumann, C., Burnett, M., Metoyer, R. and Adams, S. Using Cognitive Dimensions: Advice from the Trenches, Journal of Visual Languages and Computing, 17(4), 302-327, August 2006.
6. Robertson, T. J., Lawrance, J. and Burnett, M. Impact of High-Intensity Negotiated-Style Interruptions on End-User Debugging, Journal of Visual Languages and Computing, 17(2), 187-202, April 2006.

Conference Papers

7. Lawrance, J., Jung, S. and Wiseman, C. Git on the Cloud in the Classroom, ACM SIGCSE 2013. Denver, Colorado, March 2013, to appear. (37.8% acceptance rate)
8. Lawrance, J., Burnett, M., Bellamy, R., Bogart, C. and Swart, C. Reactive Information Foraging for Evolving Goals, ACM CHI 2010. Atlanta, Georgia, April 2010, 25-34. (22% acceptance rate)
9. Lawrance, J., Bellamy, R., Burnett, M. and Rector, K. Can Information Foraging Pick the Fix? A Field Study, IEEE VL/HCC, September 2008, 57-64. (28.6% acceptance rate)
10. Lawrance, J., Bellamy, R., Burnett, M. and Rector, K. Using Information Scent to Model the Dynamic Foraging Behavior of Programmers in Maintenance Tasks, ACM CHI 2008, Florence, Italy, April 2008, 1323-1332. (22% acceptance rate) (**Best Paper Honorable Mention**, awarded to 30 of the 714 submitted papers)
11. Lawrance, J., Bellamy, R., and Burnett, M. Scents in Programs: Does Information Foraging Theory Apply to Program Debugging? IEEE VL/HCC 2007, Coeur d'Alne, Idaho, September 2007, 15-22. (32% acceptance rate)
12. Lawrance, J., Abraham, R., Burnett, M. and Erwig, M. Sharing Reasoning to Improve Fault Localization in Spreadsheets, IEEE VL/HCC 2006, Brighton, United Kingdom, September 2006, 35-42. (25% acceptance rate)
13. Beckwith, L., Kissinger, C., Burnett, M., Wiedenbeck, S., Lawrance, J., Blackwell, A. and Cook, C. Tinkering and Gender in End-User Programmers' Debugging, ACM CHI 2006, Montréal, Quebec, Canada, April 2006, 231-240. (23% acceptance rate)
14. Lawrance, J., Clarke, S., Burnett, M. and Rothermel, G. How well do professional developers test with code coverage visualizations? An empirical study, IEEE VL/HCC 2005, Dallas, Texas, September 2005, 53-60. (31% acceptance rate)

Minor Papers

15. Lawrance, J. and Jung, S. Git on the cloud workshop, Journal of Computing Sciences in Colleges, Volume 28, Issue 6, June 2013, 14-15.
16. Torosyan, R. and Lawrance, J. Making Feedback and Grading More Natural Using Google Docs and Forms, New England Faculty Development Consortium, November 2012.
17. Wiseman, C., Lawrance, J. and Suresh, D. Rapidly Gauging Student Comprehension with Online Tools, New England Faculty Development Consortium, June 2012.
18. Burnett, M., Bogart, C., Cao, J., Grigoreanu, V., Kulesza, T. and Lawrance, J., End-User Software Engineering and Distributed Cognition, SEEUP Workshop at ICSE, May 2009, 9-19.
19. Lawrance, J., Bogart, C., Burnett, M., Bellamy, R., and Rector, K. How People Debug, Revisited: An Information Foraging Theory Perspective, IBM TR RC24783, April 2009.
20. Lawrance, J. Using Programming by Demonstration to Reorganize User Interfaces, Graduate Student Consortium at IEEE VL/HCC, Brighton, United Kingdom, September 2006, 238-239.
21. Lawrance, J., Burnett, M., Abraham, R. and Erwig, M. Toward Sharing Reasoning to Improve Fault Localization in Spreadsheets, WEUSE II Workshop at ACM CHI 2006.
22. Burnett M., Dagit, J., Lawrance, J., Beckwith, L. and Kissinger, C. Experiences with Cognitive Dimensions, Cognitive Dimensions 10th Anniversary Workshop at IEEE VL/HCC 2005.
23. Lawrance, J., Clarke, S., Burnett, M. and Rothermel, G. How Well Do Professional Developers Test with Code Coverage Visualizations? An Empirical Study, Oregon State University TR 2005-86, March 2005.