

VITA EMERSON MURPHY-HILL

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EDUCATION

Ph.D. in Computer Science 9/2004 — 2/2009

Portland State University | Portland, Oregon

Dissertation: *Programmer-Friendly Refactoring Tools* | Advisor: Andrew P. Black

B.Sc. in Computer Science 9/2001 — 6/2004

The Evergreen State College | Olympia, Washington

EMPLOYMENT

Postdoctoral Research Fellow 4/2009 — Present

Software Practices Lab | The University of British Columbia | Host: Gail C. Murphy

Graduate Research Assistant 9/2004 — 3/2009

Multiview and Infopipes projects | Portland State University | Supervisor: Andrew P. Black

Software Development Tool Intern 3/2008 — 6/2008

Development Technologies | Apple, Inc. | Supervisor: Andrew Pontious

Undergraduate Research Assistant 8/2002 — 6/2004

Scientific Database Lab | The Evergreen State College | Supervisor: Judy B. Cushing

TEACHING EXPERIENCE

**Instructor, Computer Science 410,
Advanced Software Engineering** Fall 2009

The University of British Columbia

Activities | Update and expand existing course material, create and deliver lectures, design learning activities and exams, grade deliverables, and redesign team project guidelines.

Outcomes | Students learned engineering concepts for building large software projects, and developed applications for Facebook, Google App Engine, and Xbox LIVE. Several teams made money from deploying their software, and continued development since the course ended.

**Guest Lecturer, Scholarship Skills (CS 510) and
Advanced Programming Languages (CS 410/510)** 2006, 2007, 2008

Portland State University

Activities | Create lectures on (a) publishing research and (b) test-driven development.

Outcomes | Students learned skills for (a) creating impactful research from start-to-finish and (b) creating reliable software by writing tests before implementation.

PUBLICATIONS

Conference

- [1] Thomas Fritz, Jingwen Ou, Gail C. Murphy and Emerson Murphy-Hill. A Degree-of-Knowledge Model to Capture Source Code Familiarity. In submission as a technical paper to the International Conference on Software Engineering (ICSE), 2010. (Acceptance rate: 14%)
- [2] Emerson Murphy-Hill, Chris Parnin, and Andrew Black. How We Refactoring and How We Know It. International Conference on Software Engineering (ICSE). IEEE, pp. 287-297, 2009. (Acceptance rate: 12%) (Winner of ACM SIGSOFT Distinguished Paper Award)
- [3] Emerson Murphy-Hill and Andrew Black. Breaking the Barriers to Successful Refactoring. International Conference on Software Engineering (ICSE). ACM, pp. 421-430, 2008. (Acceptance rate: 11%)
- [4] Emerson Murphy-Hill, Philip Quitslund, and Andrew Black. Removing Duplication from java.io: a Case Study Using Traits. Practitioner Report at the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA). ACM, pp. 282-291, 2005.
- [5] Emerson Murphy-Hill and Andrew Black. Traits: Experience with a Language Feature. Practitioner Report at the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA). ACM, pp. 275 – 282, 2004.

Journal

- [6] Emerson Murphy-Hill and Andrew Black. Refactoring Tools: Fitness for Purpose. IEEE Software. IEEE, pp. 38-44, September/October 2008. (Acceptance rate: 15%)
- [7] Judy Cushing, Nalini Nadkarni, Michael Finch, Anne Fiala, Emerson Murphy-Hill, Lois Delcambre, and Dave Maier. Component-Based End-User Database Design for Ecologists. Journal of Intelligent Information Systems (JIIS). Springer, pp. 7-24, August 2007.

Workshop

- [8] Emerson Murphy-Hill. A Model of Refactoring Tool Use. 3rd Workshop on Refactoring Tools at the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA). ACM, to appear, 2009.
- [9] Emerson Murphy-Hill and Andrew Black. Seven Habits of a Highly Effective Smell Detector. International Workshop on Recommendation Systems for Software Engineering at the International Conference on Software Engineering (ICSE). ACM, pp. 36-41, 2008.
- [10] Emerson Murphy-Hill, Andrew Black, Danny Dig, and Chris Parnin. Gathering Refactoring Data: a Comparison of Four Methods. 2nd Workshop on Refactoring Tools at the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA). ACM, 2008.

- [11] Emerson Murphy-Hill and Andrew Black. High Velocity Refactoring in Eclipse. Eclipse Technology Exchange at the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA). ACM, p. 1-5, 2007.
- [12] Emerson Murphy-Hill and Andrew Black. Why Don't People Use Refactoring Tools?. 1st Workshop on Refactoring Tools at the European Conference on Object-Oriented Programming (ECOOP). TU Berlin Technical Report, ISSN 1436-9915, pp. 60-61, 2007.
- [13] Philip Quitslund, Emerson Murphy-Hill, and Andrew Black. Supporting Java Traits in Eclipse. Eclipse Technology Exchange, Companion to the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA). ACM, pp. 37-41, 2004.

Articles in Preparation

- [14] Emerson Murphy-Hill and Gail C. Murphy. Programmers Effectively Discover New Tools by Peer Observation and Peer Recommendation. In preparation for submission to the International Symposium on the Foundations of Software Engineering (FSE), 2010.
- [15] Emerson Murphy-Hill and Andrew P. Black. Restructuring Software with Gestures. In preparation for submission to Visual Languages and Human-Centric Computing (VH/HCC), 2010.
- [16] Emerson Murphy-Hill and Andrew P. Black. Informing Developers about Design Problems. In preparation for submission to the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), 2010.
- [17] Emerson Murphy-Hill and Andrew Black. Effective Representations for Refactoring Errors. In preparation for submission to the ACM Transactions on Software Engineering and Methodology (TOSEM).
- [18] Emerson Murphy-Hill, Chris Parnin, and Andrew Black. Refactoring Behavior in the Wild. In preparation for submission to the IEEE Transactions on Software Engineering (TSE).

RESEARCH TALKS, POSTERS, AND DEMONSTRATIONS

- [19] Emerson Murphy-Hill. Finding Code Smells in Eclipse. Eclipse Demo Camp, Portland, Oregon (June) and Vancouver, British Columbia (November), 2009.
- [20] Emerson Murphy-Hill. Seven Habits of a Highly Effective Smell Detector. Poster at the Student Research Forum at the International Symposium on the Foundations of Software Engineering (FSE), Atlanta, Georgia, 2008.
- [21] Emerson Murphy-Hill. Scalable, Expressive, Context-Sensitive Code Smell Display. Poster at the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), Nashville, Tennessee. 2008.
- [22] Emerson Murphy-Hill. Activating Refactorings Faster. Student Research Competition at the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), Montréal, Quebec. 2007.

- [23] Emerson Murphy-Hill and Andrew Black. Flossing Regularly — the Key to Healthy Software. Poster at the European Conference on Object-Oriented Programming (ECOOP), Berlin, Germany 2007.
- [24] Emerson Murphy-Hill. Improving Usability of Refactoring Tools. Student Research Competition at the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), Portland, Oregon. 2006.
- [25] Emerson Murphy-Hill and Andrew Black. Tools for a Successful Refactoring. Demonstration at the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), Portland, Oregon. 2006.
- [26] Emerson Murphy-Hill. Alternative Interfaces to Eclipse Refactoring Tools. Eclipse Demo Camp, Portland, Oregon. 2006.
- [27] Emerson Murphy-Hill, Chuan-kai Lin, Andrew Black, and Jon Walpole. Can Infopipes Facilitate Reuse in a Traffic Application? Poster at the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), San Diego, California. 2005.
- [28] Emerson Murphy-Hill. A Vehicle Traffic Analysis Tool. Presentation to the European Smalltalk Users Group (ESUG), Brussels, Belgium. 2005.
- [29] Emerson Murphy-Hill. What a Guy Who's Still in School Thinks. Invited Talk and Panel at The Evergreen State College, Olympia, Washington. 2005.
- [30] Emerson Murphy-Hill and Andrew Black. The Trait Extractor: A Tool for Generating Traits in Java. Consortium for Computing Sciences in Colleges (CCSC), Salem, Oregon. 2004.
- [31] Emerson Murphy-Hill. LegalTransform: a Framework for Making Legal Documents Accessible to Humans. Presentation to the Olympia Microcomputer Users Group, Olympia, Washington. 2004.
- [32] Judith Bayard Cushing, Nalini Nadkarni, Michael Finch, Youngmi Kim and Emerson Murphy-Hill. The Canopy Database Project: Component-Driven Database Design & Visualization. Poster presented to the IEEE Visualization Conference (VIS), Seattle, Washington. 2003.
- [33] Emerson Murphy-Hill, Andrew Black, and Judy Cushing. Traits: Evaluating a Language Feature | Object-Oriented Candyland or Inheritance Quagmire?. Consortium for Computing Sciences in Colleges (CCSC), Ellensburg, Washington. 2003.

AWARDS

- ACM SIGSOFT Distinguished Paper Award, International Conference on Software Engineering (ICSE), 2009
- 3rd Place, ACM Student Research Competition, ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), 2007.
- 2nd Place, ACM Student Research Grand Finals, 2007.
- 2nd Place, ACM Student Research Competition, ACM SIGPLAN International Conference

on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), 2006.

GRANTS AND SCHOLARSHIPS

- ACM Special Interest Group on Software Engineering CAPS Travel Grant, November 2008
- Marie Brown Graduate Student Travel Award from Portland State University, November 2008.
- Academically-Controlled Auxiliary Activities Travel Grant from Portland State University, November 2008
- Academically-Controlled Auxiliary Activities Travel Grant from Portland State University, April 2008
- National Science Foundation Computer Science Scholarship, 2003-2004.
- Scottish Rite Foundation of Washington Scholarship, 2003-2004.
- Olympia Microcomputer User Group Scholarship, 2003-2004.
- Chastain/Barnett Scholarship, 2003-2004.

PEER REVIEWING ACTIVITIES

- Program Committee, Evaluation and Usability of Programming Languages and Tools Workshop (PLEATEAU) at the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), 2009, 2010.
- Reviewer, ACM Conference on Computer Supported Cooperative Work (CSCW), 2010.
- Selection Committee, ACM Student Research Competition, the International Conference on Software Engineering (ICSE), 2010.
- External Reviewer, International Conference on Software Engineering (ICSE), 2010.
- Reviewer, Journal of Systems and Software (JSS), 2007, 2009.
- External Reviewer, Foundations of Software Engineering (FSE), 2009.
- Reviewer and poster judge, Rising Stars of Research, 2009.
- Reviewer, IEEE Software, 2008, 2009.
- Reviewer, Communications of the ACM (CACM), 2008.
- External Reviewer, European Conference on Object-Oriented Programming (ECOOP), 2007.
- Experience Report Review Committee and paper shepherd, Agile 2007.

PROFESSIONAL ACTIVITIES

- Student Volunteer, ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), 2007, 2008, 2009.
- Student Volunteer, International Conference on Software Engineering (ICSE), 2008.
- Poster Judge, Consortium for Computing Sciences in Colleges Northwest Conference (CCSC), 2007.

- Student Volunteer, Agile Open Northwest, 2007.
- Student Volunteer, Foundations of Software Engineering (FSE), 2006.
- Student Volunteer, European Smalltalk Users Group Conference (FSE), 2004, 2005.

LEADERSHIP ACTIVITIES

- Co-Organizer, Evaluation and Usability of Programming Languages and Tools Workshop (PLATEAU) at the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), 2009, 2010.
- Supervised undergraduate co-op student in building collaborative system for sharing software tool knowledge at the University of British Columbia, 2009.
- Student Volunteer Captain, ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), 2009.
- Student Volunteer Captain, Agile Open Northwest, 2009.
- Co-Organizer, Programming Contest for the International Conference on Functional Programming, 2008.
- President of the Computer Science Graduate Student Council at Portland State University, 2006-2008.
- Supervised master's student's project on Infopipes abstraction at Portland State University, 2005.

PROFESSIONAL AFFILIATIONS

Member, Association of Computing Machinery (ACM)	2003 — Present
Member, ACM Special Interest Group on Software Engineering (SIGSOFT)	2008 — Present