

Research Intern
Human Interactions in Programming

Microsoft Research
Redmond, USA
Fall 2007

Investigated developer information needs while exploring external source code and developed a tool to increase the developer's understanding of how and why code had changed in the past.

Visiting Researcher
Center for Advanced Studies

IBM Canada
Ottawa, Canada
August 2006

Performed early validation of doctoral thesis premise and early prototype tool. Remainder of time was spent brainstorming techniques to make source code dependency investigation more effective.

Research Assistant
Department of Computer Science

University of British Columbia
Vancouver, Canada
2002–2004

Researched approaches to automatically locate source code examples that are relevant to a developer's current workspace in order to help them better understand how to use large frameworks.

Undergraduate Researcher
Software Practices Lab

University of British Columbia
Vancouver, Canada
April–Dec 2000

Researched and implemented techniques for increasing the scalability of an object-oriented runtime visualization system.

INDUSTRIAL
EXPERIENCE

Program Manager (intern)
Digital Lifestyle User Experience

Microsoft Corporation
Redmond, USA
May–Aug 2002

Investigated and specified features for detecting and managing security and stability problems in a web browser.

Software Engineer
Integration Engine

Pivotal Corporation
Vancouver, Canada
April–Sept 2001

Investigated integrating projects using XML-based interconnections.

Information Technologist
Network Solutions

Suncor Energy
Fort McMurray, Canada
Jan–Aug 1999

Investigated and implemented security solutions for remote access to a large corporate network.

Network Engineer
University Support Services

University of British Columbia
Vancouver, Canada
Sept 1997–Jan 1999

Helped manage and maintain residential network access for 5,000 users.

HONOURS AND
AWARDS

- Nominated for the Governor General’s Gold Medal 2009
 - Nominated for the Chancellor’s Graduate Medal 2009
 - NSERC PDF Postdoctoral Fellowship – \$80,000 2008
 - MSR Challenge Award for “A Newbie’s Guide to Eclipse APIs”,
Working Conference on Mining Software Repositories 2008
 - Best Presentation Award for “Informing Eclipse API Production and
Consumption”, *Eclipse Technology Exchange Workshop at OOPSLA* 2007
 - Ruby Doctoral Scholarship – \$16,000 2007
 - Queen Elizabeth II Doctoral Scholarship – \$15,000 2007
 - Departmental Research Award – \$8,000 2006
 - ACM Distinguished Paper Award for “Using Structural Context to
Recommend Source Code Examples”, *International Conference on
Software Engineering* 2005
 - Departmental Research Award – \$8,000 2005
 - Departmental Research Award – \$8,000 2004
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GRANTS

- NSERC Discovery – *Understanding dynamic behaviour* – \$120,000 2011
 - NSF SHF:Small Grant – *Partitioning static and dynamic dependences
across versions* (with David Notkin) – \$188,424 2010
 - NSF SHF:Medium Grant – *Speculation and continuous validation for
software development* (with Michael Ernst, David Notkin, and
Yuriy Brun) – \$750,000 2010
 - IBM Jazz Innovation Grant – *Proactive Entropy Awareness
System* (with David Notkin) – \$16,000 2008
 - ACM Travel Grant – \$1,000 2006
 - IBM Eclipse Innovation Grant – *Real-Time Example Generation,
Analysis, and Integration* (with Rob Walker) – \$25,000 2005
 - ACM Travel Grant – \$1,000 2005
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TEACHING
ACTIVITIES

- University of Waterloo — David R. Cheriton School of Computer Science
- Professor CS 846 - Human Aspects of Software Engineering Fall 2011
 - Professor CS 446 - Software Architecture and Design Fall 2011
 - Professor CS 436 - Networking and Distributed Systems Winter 2011
 - Professor CS 446 - Software Architecture and Design Fall 2010
- University of Washington — Department of Computer Science & Engineering
- Guest Lecture CSEP 504 - Advanced Software Engineering Winter 2009
- University of Calgary — Department of Computer Science
- Teaching Assistant CS 531 - Software Evolution Winter 2006
 - Teaching Assistant CS 531 - Software Evolution Winter 2005
 - Teaching Assistant CS 311 - Software Engineering Fall 2004
- University of British Columbia — Department of Computer Science
- Teaching Assistant CS 319 - Software Engineering Project Fall 2003
 - Teaching Assistant CS 410 - Advanced Software Engineering Fall 2002
 - Teaching Assistant CS 310 - Software Engineering Winter 2002
 - Teaching Assistant CS 310 - Software Engineering Fall 2002
 - Teaching Assistant CS 310 - Software Engineering Winter 2000
 - Teaching Assistant CS 310 - Software Engineering Fall 1999

JOURNAL
PUBLICATIONS

1. **Reid Holmes**, Robert J. Walker, and Gail C. Murphy. Approximate structural context matching: An approach for recommending relevant examples. *IEEE Transactions on Software Engineering (TSE)*, 32(12):952-970, December 2006.
2. **Reid Holmes** and Robert J. Walker. Systematizing Pragmatic Software Reuse. *ACM Transactions on Software Engineering and Methodology (TOSEM)*. 52 pages, 2011. TO APPEAR.

CONFERENCE
PUBLICATIONS

3. Yuriy Brun, **Reid Holmes**, Michael D. Ernst, and David Notkin. Proactive Detection of Collaboration Conflicts *In Proceedings of the Symposium on the Foundations of Software Engineering (ESEC/FSE)*. 2011. TO APPEAR. [FSE-8; Szeged, Hungary]. (17% acceptance rate). **Awarded ACM SIGSOFT Distinguished Paper Award.**
4. **Reid Holmes** and David Notkin. Identifying Program, Test, and Environmental Changes That Affect Behaviour. *In Proceedings of the International Conference on Software Engineering (ICSE)*, 10 pages, 2011. TO APPEAR. [ICSE-33; Honolulu, USA]. (14% acceptance rate)

5. **Reid Holmes** and Robert J. Walker. Customized Awareness: Recommending Relevant External Change Events. *In Proceedings of the International Conference on Software Engineering (ICSE)*, pages 465–474, 2010. [ICSE-32; Cape Town, South Africa] (14% acceptance rate)
6. **Reid Holmes**, Tristan Ratchford, Martin P. Robillard, and Robert J. Walker. Automatically Recommending Triage Decisions for Pragmatic Reuse Tasks. *In Proceedings of the International Conference on Automated Software Engineering (ASE)*, pages 397–408, 2009. [ASE-24; Auckland, New Zealand] (17% acceptance rate)
7. **Reid Holmes**, Rylan Cottrell, Robert J. Walker, and Joerg Denzinger. The End-to-End Use of Source Code Examples: An Exploratory Study. *In Proceedings of the International Conference on Software Maintenance (ICSM)*, pages 555–558, 2009. [ICSM-25; Edmonton, Canada] (39% acceptance rate)
8. **Reid Holmes** and Robert J. Walker. Lightweight, semi-automated enactment of pragmatic-reuse plans. *In Proceedings of the International Conference on Software Reuse*, pages 330–342, 2008. [ICSR-10; Beijing, China] (26% acceptance rate)
9. **Reid Holmes** and Andrew Begel. Deep Intellisense: A tool for rehydrating evaporated information. *In Proceedings of the Working Conference on Mining Software Repositories*, pages 23–26, 2008. [MSR-5; Leipzig, Germany] (40% acceptance rate)
10. **Reid Holmes** and Robert J. Walker. A newbie’s guide to Eclipse APIs. *In Proceedings of the Working Conference on Mining Software Repositories*, Challenge Track, pages 149–152, 2008. [MSR-5; Leipzig, Germany] **MSR Mining Challenge Award.**
11. **Reid Holmes** and Robert J. Walker. Supporting the investigation and planning of pragmatic reuse tasks. *In Proceedings of the International Conference on Software Engineering*, pages 447–457, 2007. [ICSE-29; Minneapolis, USA] (15% acceptance rate)
12. **Reid Holmes**. Unanticipated reuse of large scale software features. *In Proceedings of the International Conference on Software Engineering*, Doctoral Symposium, pages 961–964, 2006. [ICSE-28; Shanghai, China] (29% acceptance rate)
13. **Reid Holmes** and Gail C. Murphy. Using structural context to recommend source code examples. *In Proceedings of the International Conference on Software Engineering*, pages 117–125, 2005. [ICSE-27; St. Louis, USA] (14% acceptance rate) **ACM SIGSOFT Distinguished Paper Award.**

14. Yuriy Brun, **Reid Holmes**, Michael D. Ernst, and David Notkin. Speculative Analysis: Exploring Future States of Software, *In Proceedings of the Foundations of Software Engineering Working Conference on the Future of Software Engineering Research*. pages 59–64, 2010. [FoSER10; Santa Fe, USA]
15. **Reid Holmes**, David Notkin. Enhancing Static Source Code Search With Dynamic Data. *In Proceedings of the International Workshop on Search-Driven Development - Users, Infrastructure, Tools and Evaluation (SUITE)*, pages 13–16, 2010. [SUITE-2; Cape Town, South Africa]
16. Rylan Cottrell, Brina Goyette, **Reid Holmes**, Robert J. Walker, and Joerg Denzinger. Compare and Contrast: Visual Exploration of Source Code Examples. *In Proceedings of the International Workshop on Visualizing Software for Understanding and Analysis (VISSOFT)*, pages 29–32, 2009. [VISSOFT-5; Edmonton, Canada]
17. **Reid Holmes**. Do developers search for source code examples using multiple facts?. *In Proceedings of the International Workshop on Search-Driven Development - Users, Infrastructure, Tools and Evaluation (SUITE)*, pages 13–16, 2009. [SUITE-1; Vancouver, Canada]
18. **Reid Holmes** and Robert J. Walker. Developer-Specific Awareness of External Changes. *In Proceedings of the Workshop on Socio-Technical Congruence (STC)*, 4 pages, 2009. [STC-2; Vancouver, Canada]
19. **Reid Holmes** and Robert J. Walker. Promoting developer-specific awareness. *In Proceedings of the Workshop on Cooperative and Human Aspects of Software Engineering at the International Conference on Software Engineering*, pages 61–64, 2008. [CHASE-1; Leipzig, Germany]
20. **Reid Holmes** and Robert J. Walker. Informing Eclipse API production and consumption. *In Proceedings of the Eclipse Technology Exchange Workshop at the ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications*, pages 70–74, 2007. [ETX-5; Montreal, Canada] **Best Presentation Award.**
21. **Reid Holmes** and Robert J. Walker. Supporting task-specific source code dependency investigation. *In Proceedings of the IEEE International Workshop on Visualizing Software for Understanding and Analysis*, pages 100–107, 2007. [VISSOFT-4; Banff, Canada]
22. Robert J. Walker, **Reid Holmes**, Ian Hedgeland, Puneet Kapur, and Andrew Smith. A lightweight approach to technical risk estimation via probabilistic impact analysis. *In Proceedings of the Mining Software Repositories Workshop at the International Conference on Software Engineering*, pages 98–104, 2006. [MSR-3; Shanghai, China]

23. **Reid Holmes** and Gail C. Murphy. Unsticking Eclipse plug-in development. *Eclipse Technology Exchange Workshop at the ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications*, 8 pages, 2004. [ETX-2; Vancouver, Canada]
24. Davor Cubranic, **Reid Holmes**, Annie T. T. Ying, and Gail C. Murphy. Tools for light-weight knowledge sharing in open-source software development. *Position paper for the Workshop on Open Source Software: Taking Stock of the Bazaar at the International Conference on Software Engineering*, pages 25–30, 2003. [OSSE-3; Portland, USA]
25. Andrew Chan, **Reid Holmes**, Gail C. Murphy, and Annie T. T. Ying. Scaling an object-oriented system execution visualizer through sampling. *In Proceedings of the International Workshop on Program Comprehension*, pages 237–244, 2003. [IWPC-11; Portland, USA]

RESEARCH
DEMONSTRATIONS

26. Yuriy Brun, **Reid Holmes**, Michael D. Ernst, and David Notkin. Crystal: Precise and Unobtrusive Conflict Warnings. *In Proceedings of the Symposium on the Foundations of Software Engineering (ESEC/FSE)*. 4 pages, 2011. TO APPEAR. [FSE-8; Szeged, Hungary]
27. **Reid Holmes** and David Notkin. Identifying Opaque Behavioural Changes. *In Proceedings of the International Conference on Software Engineering*, 3 pages, 2011. TO APPEAR. [ICSE-33; Honolulu, USA]
28. **Reid Holmes** and Robert J. Walker. Semi-automating pragmatic reuse tasks. *In Proceedings of the Conference on Automated Software Engineering*, pages 481–482, 2008. [ASE-23; L'Aquila, Italy]
29. **Reid Holmes** and Gail C. Murphy. Strathcona example recommendation tool. *In Proceedings of the International Symposium on Foundations of Software Engineering*, pages 237–240, 2005. [FSE-13; Lisbon, Portugal]

TECHNICAL
REPORTS

30. Yuriy Brun, **Reid Holmes**, Michael D Ernst, David Notkin. *Speculative Identification of Merge Conflicts and Non-Conflicts*. University of Washington Technical Report UW-CSE-10-03-01. 10 pages, 2010.
31. **Reid Holmes**, Rylan Cottrell, Robert J. Walker, and Joerg Denzinger. *The End-to-End Use of Source Code Examples: An Exploratory Study — Appendix*. University of Calgary Technical Report 2009-934-13. 8 pages, 2009.

- THESES
32. **Reid Holmes**. Pragmatic software reuse. *Ph.D. Dissertation*, November 2008.
33. **Reid Holmes** Using structural context to recommend source code examples. *M.Sc. Dissertation*, August 2004.
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- PATENTS
- Benedek, Franco, Guo, Hally, **Holmes**, Pamucci, Praitis, Sager, and Wentz. System and method of preventing a web Browser plug-in module from generating a failure. US Patent # 7,398,433. Awarded July 2008.
- Begel, Venolia, **Holmes**. Development environment integration with version history tools. US Application # 12/126,251. May, 2008.
- Franco, Guo, Pamucci, Sager, **Holmes**, Hally, and Bendek. Add-on management. US Application # 10/822,221. April 2004.
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- OTHER TALKS
- Exposing Opaque Changes by Contrasting Static and Dynamic Analyses*
 Department of Computer Science & Engineering Industrial Affiliates Day
 University of Washington, Seattle, USA. October 29, 2009
- Pragmatic Software Reuse*
 Departmental Graduate Seminar
 University of Calgary, Calgary, Canada. November 21, 2008
- Deep Intellisense: Re-hydrating Evaporated Knowledge*
 Research Overview
 Microsoft Research, Redmond, USA. December 14, 2007
- Using Structural Context to Recommend Source Code Examples*
 Departmental Graduate Seminar
 University of Calgary, Calgary, Canada. June 10, 2005
- Using Structural Context to Recommend Source Code Examples*
 Departmental Graduate Seminar
 University of British Columbia, Vancouver, Canada. August 22, 2004
- OOVisualizer: Visualizing Software Execution*
 Consortium of Canadian Software Engineering Research
 Toronto, Canada. September 20, 2000
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- SERVICE
 ACTIVITIES
- Software Engineering Community
- Reviewer — ACM Transactions on Software Engineering and Methodology (TOSEM) 2011

- Reviewer — IEEE Transactions on Software Engineering (TSE) 2011
- Reviewer — IEEE Software 2011
- Reviewer — Empirical Software Engineering Journal 2011
- Program Committee Member — Working Conference on Reverse Engineering (WCRE) 2011
- Program Committee Member — Working Conference on Mining Software Repositories (MSR) 2011
- Program Committee Member — Symposium on the Foundations of Software Engineering — New Ideas Track (ESEC/FSE) 2011
- Program Committee Member — International Conference on Software Maintenance — Early Research Track (ICSM) 2011
- Program Committee Member — Search-Driven Development: Users, Infrastructure, Tools and Evaluation (ICSE Workshop) 2011
- Program Committee Member — International Conference on Program Comprehension (ICPC) 2011
- Program Committee Member — Working Conference on Mining Software Repositories (MSR) 2011
- Workshop Organizer — International Workshop on Recommendation Systems for Software Engineering (ICSE Workshop) 2010
- Reviewer — IEEE Trans. on Systems, Man, and Cybernetics (SMC) 2010
- Reviewer — ACM Conference on Human Factors in Computing Systems (CHI) 2010
- Reviewer — International Conference on Aspect-Oriented Software Development (AOSD) 2010
- Program Committee Member — Working Conference on Mining Software Repositories (MSR) 2010
- Program Committee Member — Search-Driven Development: Users, Infrastructure, Tools and Evaluation (ICSE Workshop) 2010
- Program Committee Member — International Workshop on Knowledge Collaboration in Software Development (KCSO) 2009
- Program Committee Member — Search-Driven Development: Users, Infrastructure, Tools and Evaluation (ICSE Workshop) 2009
- Reviewer — ACM Transactions on Software Engineering and Methodology (TOSEM) 2009
- Reviewer — ACM Symposium on User Interface Software and Technology (UIST) 2009
- Jury Member — Mining Software Repositories Challenge 2009
- Reviewer — Software: Practice and Experience (SPE) 2009
- Reviewer — ACM Transactions on Software Engineering and Methodology (TOSEM) 2008
- Reviewer — IEEE Software 2008

- Reviewer — Automated Software Engineering Journal 2007
- University of Waterloo — School of Computer Science
- Undergraduate Recruitment 2011
 - Undergraduate Recruitment 2010
- University of Calgary — Department of Computer Science
- Hiring Committee 2006
 - Vice-President (Social), Computer Science Graduate Student's Association 2005
 - New Graduate Student Orientation Co-ordinator 2005
- University of British Columbia — Department of Computer Science
- Vice-President (Social), Computer Science Graduate Student's Association 2004
 - New Graduate Student Orientation Co-ordinator 2004
 - Student Volunteer — Window on the World Conference Newspaper, ICSE-25, Portland, OR, USA 2003

Last Revised: November 16, 2011