

# REID HOLMES

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CURRICULUM VITAE

Department of Computer Science and Engineering  
University of Washington *rtholmes@cs.washington.edu*  
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Washington, USA  
98195

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## EDUCATION

**Ph.D., Computer Science** November 2008  
University of Calgary, Calgary, Canada  
*Pragmatic Software Reuse*  
Supervisor: Robert J. Walker

**M.Sc., Computer Science** August 2004  
University of British Columbia, Vancouver, Canada  
*Using Structural Context to Recommend Source Code Examples*  
Supervisor: Gail C. Murphy

**B.Sc., Computer Science** May 2002  
University of British Columbia, Vancouver, BC, Canada

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## RESEARCH EXPERIENCE

*Postdoctoral Fellow* **University of Washington**  
*Department of Computer Science &* **Washington, USA**  
*Engineering* **September 2008–Present**  
Hosted by David Notkin  
Currently investigating new techniques to automatically detect when software  
behaviour is inconsistent with a developer's expectations.

*Research Assistant* **University of Calgary**  
*Department of Computer Science* **Calgary, Canada**  
**2004–2008**  
Investigated a comprehensive approach, termed *Pragmatic Reuse*, by which  
productivity can be increased by supporting informal source code reuse tasks.

*Research Intern* **Microsoft Research**  
*Human Interactions in Programming* **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.

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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

- 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 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*, 32(12):952-970, December 2006.
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CONFERENCE  
PUBLICATIONS

2. **Reid Holmes** and Robert J. Walker. Customized Awareness: Recommending Relevant External Change Events. *In Proceedings of the International Conference on Software Engineering (ICSE)*, 10 pg, 2010. To Appear. [ICSE-32; Cape Town, South Africa] (14% acceptance rate)
3. **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)
4. **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)
5. **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)
6. **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)
7. **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.**
8. **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)
9. **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)

10. **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.**

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WORKSHOP  
PUBLICATIONS

11. **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)*, 4 pg., 2010. To Appear. [SUITE-2; Cape Town, South Africa]
12. 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]
13. **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]
14. **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]
15. **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]
16. **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.**
17. **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]
18. 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]

19. **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]
20. 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]
21. 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]

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RESEARCH  
DEMONSTRATIONS

22. **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]
23. **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]

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TECHNICAL  
REPORTS

24. **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.

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THESES

25. **Reid Holmes**. Pragmatic software reuse. *Ph.D. Dissertation*, November 2008.
26. **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.



- 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 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

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