THE UNIVERSITY OF BRITISH COLUMBIA

Curriculum Vitae for Faculty Members

Date: April 4, 2025 **Initials:** RH

1. SURNAME: Holmes **FIRST NAME:** Reid
MIDDLE NAME: Thomas

2. DEPARTMENT/SCHOOL: Computer Science

3. FACULTY: Science

4. PRESENT RANK: Professor

5. POST-SECONDARY EDUCATION

University or Institution	Degree	Subject Area	Dates
University of Calgary	PhD	Computer Science	09/2004 – 08/2008
University of British Columbia	MSc	Computer Science	09/2002 – 06/2004
University of British Columbia	BSc	Computer Science	09/1997 – 06/2002

6. EMPLOYMENT RECORD

(a) Prior to Coming to UBC

University, Company or Organization	Rank or Title	Dates
University of Waterloo	Assistant Professor	08/2010 – 07/2015
University of Washington	Adjunct Professor	09/2011 – 09/2013
University of Washington	NSERC Postdoctoral Fellow	08/2008 – 08/2010
Microsoft Research	Research Intern	09/2007 – 12/2007
IBM Canada	Visiting Researcher	07/2006 – 08/2006
University of Calgary	Research Assistant	09/2004 – 08/2008
University of British Columbia	Research Assistant	09/2002 – 06/2004
Microsoft	Program Manager	05/2002 – 08/2002
Pivotal Corporation	Software Engineer	04/2001 – 08/2001
University of British Columbia	Undergraduate Researcher	04/2000 – 12/2000
Suncor Energy	Information Technologist	01/1999 – 08/1999
University of British Columbia	Network Engineer	09/1997 – 01/1999

(b) At UBC

Rank	Dates
Professor	07/2022 – present
Associate Professor	09/2015 – 07/2022

(c) Date of granting of tenure at UBC: September 3, 2015.

7. LEAVES OF ABSENCE

Location	Type of Leave	Dates
École Polytechnique Fédérale de Lausanne (EPFL)	Sabbatical	01/2022 – 06/2022
University of British Columbia	Sabbatical	07/2021 – 12/2021

8. TEACHING

(a) Areas of Special Interest and Accomplishments

Experiential learning is at the core of my undergraduate teaching philosophy. I redesigned 310 around a medium-sized programming task completed over the duration of the term, requiring students to write over 2,500 lines of code (which is the single largest coding project in our required program). To enable TAs to spend less time marking and more time interacting with students, and to provide learners with formative assessments of their work, I created the AutoTest platform. AutoTest is a substantial engineering task for which I wrote over 25,000 lines of code and is used by over 1,000 UBC undergraduate students each year. In 23W1 I realigned the course to be AI-inclusive, and our experience suggests we will continue to allow these tools going forward. In 24W1 I replaced the 310 grading scheme with alternative grading; a thorough reflection with students (currently under review at TOCE) suggests we will keep using this grading scheme going forward as it improved learning.

I strongly believe in the principled improvement of teaching practice; to support this, I often innovate in my classroom teaching and report these findings to the community through competitive peer-reviewed education venues (e.g., [C-23, C-18, C-14, C-13, C-8, C-11]).

(b) Courses Taught

i. At UBC (2015 – present)

				Weekly Sessions Taught			
Session	**Course**	**Credits**	**Size**	**Lectures**	**Tutorials**	**Labs**	**Other**
2024W1	CPSC 310[1]	4	~180	2			
2024W1	CPSC 507[2]	3	6	2			
2023W1	CPSC 310[1] (double undergrad)	4	~180	2			
2023W1	CPSC 310[1]	4	~180	2			
2022W1	CPSC 310[1]	4	~180	2			
2022W1	CPSC 507[2]	3	9	2			
2019W1	CPSC 310[1] (double undergrad)	4	~180	2			
2019W1	CPSC 310[1]	4	~180	2			
2018W1	CPSC 507[2]	3	12	2			
2018W1	CPSC 310[1]	4	~160	2			
2017W2	CPSC 507[2]	3	19	2			
2017W2	CPSC 310[1]	4	~180	2			
2016W2	CPSC 507[2]	3	14	2			
2016W2	CPSC 310[1] (double undergrad)	4	~160	3			
2016W1	CPSC 310[1]	3	~160	1			
2015W2	CPSC 507[2]	3	7	2			
2015W1	CPSC 410[3]	3	~120	1			

In March 20225, Nick Bradley, my PhD student who has taught 310 three times, was hired as a lecturer in UBC-CS. Three of my former grad students (Nick Bradley, Katharine Kerr, and Felix Grund) are

[1]CPSC 310: Introduction to Software Engineering (Undergraduate course)
[2]CPSC 507: Advanced Topics in Software Engineering (Graduate course)
[3]CPSC 410: Advanced Software Engineering (Undergraduate course)

frequent instructors for 110, 210, and 310. I continue to actively support them so these teaching experiences are positive for them.

ii. At the University of Waterloo (2010 – 2015)

				Weekly Sessions Taught			
Session	**Course**	**Credits**	**Size**	**Lectures**	**Tutorials**	**Labs**	**Other**
2014W2	CS 446[4]	3	~60	2			
2014W2	CS 846[5]	3	14	2			
2013W2	CS 446[4]	3	~60	2			
2013W2	CS 846[5]	3	21	2			
2013W2	CS 446[4]	3	~60	2			
2012W1	CS 246[6]	3	~120	2			
2012W1	CS 846[5]	3	19	2			
2011W1	CS 446[4]	3	~60	2			
2011W1	CS 846[5]	3	23	2			
2010W2	CS 436[7]	3	~40	2			
2010W1	CS 446[4]	3	~60	2			

iii. At Other Institutions

				Weekly Sessions Taught			
Session	**Course**	**Hours**	**Size**	**Lectures**	**Tutorials**	**Labs**	**Other**
2022W2	CS 701 @ EPFL[8]	3	~5	2			

(c) Graduate Research Supervision

In the supervisory role column, supervision denoted with a ☆ denotes equal supervisory responsibility.

		Year			
Student Name	**Program**	**Start**	**Finish**	**Primary Supervisor**	**CoSupervisor**
Jessica Wong[9]	PhD	2024		Elisa Baniassad	Reid Holmes
Marie Salomon[10]	PhD	2024		Gail Murphy	Reid Holmes
Gauransh Tanadon	PhD	2024	*Withdrew*	Caroline Lemieux ☆	Reid Holmes ☆
Nick Bradley[11]	PhD	2018	2024	Reid Holmes	
Nico Ritschel[12]	PhD	2017	2023	Reid Holmes ☆	Ron Garcia ☆
Quinn Hanam[13]	PhD	2015	*Withdrew*	Ali Mesbah ☆	Reid Holmes ☆
Laura Inozemtseva[14]	PhD	2013	2017	Reid Holmes	
Olga Baysal[15]	PhD	2012	2014	Michael Godfrey	Reid Holmes
Partha Protim Paul[16]	MSc	2025		Reid Holmes	

(continued...)

[4]CS 446: Software Design and Architecture (Undergraduate course)
[5]CS 846: Human Aspects of Software Engineering (Graduate course)
[6]CS 246: Object-Oriented Software Development (Undergraduate course)
[7]CS 436: Distributed Computer Systems (Undergraduate course)
[8]CS 701: Human Aspects Software Engineering (EPFL Graduate course)
[9]Research topic: CSEd
[10]Research topic: Supporting Software Teams With GenAI
[11]Thesis title: *Tool Coordination in Software Development Workspaces*
[12]Research topic: Novel Techniques for End-User Robotics Programming
[13]Research topic: Improving Static Analysis Utility
[14]Thesis title: *Data Science for Software Maintenance*
[15]Thesis title: *Supporting Development Decisions with Software Analytics*
[16]Research topic: Improving Development Tools

Student Name	Program	Year		Primary Supervisor	CoSupervisor
		Start	Finish		
Phoebe Xu[17]	MSc	2024		Caroline Lemieux	Reid Holmes
Kyle Chin[18]	MSc	2023		Reid Holmes	
Shuziko Akamoto[19]	MSc	2021	2023	Reid Holmes	
Tarcisio Soares Teixeira[20]	MSc	2021	2023	Reid Holmes	
Katherine Kerr[21]	MSc	2020	2023	Reid Holmes	
Braxton Hall[22]	MSc	2020	2022	Elisa Baniassad	Reid Holmes
Noa Heyl[23]	MSc	2020	2022	Elisa Baniassad	Reid Holmes
Syed Ishtiaque Ahmad[24]	MSc	2019	2021	Reid Holmes	
Lucas Zamprogno[25]	MSc	2017	2020	Reid Holmes	
Jan Pilzer[26]	MSc	2017	2019	Reid Holmes	
Anna Scholtz[27]	MSc	2017	2019	Reid Holmes	
Xinhong (Sam) Liu[28]	MSc	2017	2019	Reid Holmes	
Felix Grund[29]	MSc	2016	2019	Reid Holmes	
Nick Bradley[30]	MSc	2016	2018	Reid Holmes	
Rodrigo Araújo[31]	MSc	2016	2018	Reid Holmes	
Adriaan Labuschagne[32]	MMath	2014	2016	Reid Holmes	
Ravi Chandra Malleboina[33]	MMath	2013	2015	Reid Holmes	
S Ashar Ghani[34]	MMath	2013	2014	Reid Holmes	
Quinn Hanam[35]	MEng	2012	2014	Lin Tan ☆	Reid Holmes ☆
Siddharth Subramanian[36]	MMath	2012	2014	Reid Holmes	
Divam Jain[37]	MMath	2012	2014	Patrick Lam ☆	Reid Holmes ☆
Laura Inozemtseva[38]	MMath	2011	2013	Reid Holmes	
Abdullah El-Sayed[39]	MMath	2011	2013	Reid Holmes	
Kimiisa Oshikoji[40]	MMath	2010	2012	Reid Holmes	

Nick Bradley defended his PhD. October 2024

Nico Ritschel defended his PhD. October 2023

External supervisor for Feliepe Fronchetti, PhD student at the Universtiy of Virginia. 2020-2023

External supervisor for Roy Rutishauser, PhD student at the Universtiy of Zurich. 2021-2023

[17] Research topic: Improving Code/Comment Alignment

[18] Research topic: Improving Autograders With Alternative Grading

[19] Research topic: Microservice Refactoring

[20] Research topic: Software Verification

[21] Research topic: Improving Code Review Decision Quality

[22] Thesis title: *Evaluating the Quality of Student-Written Software Tests With Curated Mutation Analysis*

[23] Thesis title: *Team Harmony Before, During, and After COVID-19*

[24] Thesis title: *Investigating the Impact of Methodological Choices on Source Code Maintenance Analyses*

[25] Thesis title: *Automated Human-in-the-Loop Assertion Generation*

[26] Thesis title: *Supporting Focused Work on Window-based Desktops*

[27] Thesis title: *Automatic Conceptual Window Grouping with Frequent Pattern Matching*

[28] Thesis title: *Augmenting Source Code Editors with External Information*

[29] Thesis title: *CodeShovel: Constructing Robust Source Code History*

[30] Thesis title: *Context-Aware Conversational Developer Assistants*

[31] Thesis title: *Enabling Configuration Self-Adaptation Using Machine Learning*

[32] Thesis title: *Continuous Integration Build Failures in Practice*

[33] Essay title: *Continuous Partial Test Suite Execution*

[34] Essay title: *An Empirical Study of Test Suite Reduction*

[35] Thesis title: *Improving Static Analysis Alert Rankings*

[36] Thesis title: *Live API Documentation*

[37] Thesis title: *Detecting Test Clones with Static Analysis*

[38] Thesis title: *Predicting test Suite Effectiveness for Java Programs*

[39] Thesis title: *Identifying Behavioural Implications of Source Code Changes*

[40] Thesis title: *Evaluating Library Configurations*

Nick Bradley achieved PhD Candidacy. June 2022
Nico Ritschel achieved PhD Candidacy. September 2021
Quin Hanam is on Leave to Amazon. 2019
Laura Inozemtseva is now at Karaius Health Care. 2017
Olga Baysal is now an associate professor at Carleton University. 2016

Graduate Student Awards Under my Supervision

Nick Bradley:

- Awarded the NSERC PGS-D. 2018
- Awarded the UBC 4YF scholarship. 2018

Quinn Hanam:

- Awarded the UBC 4YF scholarship. 2016

Laura Inozemtseva:

- Microsoft PhD Fellowship, the 2nd Canadian student to win this award ($64,000). 2015
- Murray Martin Prize for the best research paper in Math at UWaterloo ($5,000). 2015
- Cheriton Graduate Scholarship at the UWaterloo ($20,000). 2014
- Ontario Graduate Scholarship ($15,000). 2014
- President's Graduate Scholarship at UWaterloo ($10,000). 2014
- Invited to attend the Future of Software Engineering Symposium by the NSF. 2013

(d) Postdoc Supervision

		Year			
Student Name	**Program**	**Start**	**Finish**	**Primary Supervisor**	**CoSupervisor**
Shaiful Chowdhury	Postdoc	2019	2022	Reid Holmes	
Xin Xia	Postdoc	2016	2017	Gail Murphy	Reid Holmes
Haroon Malik	Postdoc	2014	2015	Michael Godfrey ☆	Reid Holmes ☆
Cheng Zhang	Postdoc	2014	2015	Michael Godfrey	Reid Holmes
Hadi Hemmanti	Postdoc	2012	2013	Michael Godfrey ☆	Reid Holmes ☆

Shaiful Chowdhury is an Assistant Professor at the University of Manitoba.
Xin Xia is an Assistant Professor at Monash University.
Haroon Malik is an Associate Professor at Marshall University.
Hadi Hemmanti is an Associate Professor at York University.

(e) Undergraduate Supervision

		Year		
Student Name	**Program**	**Start**	**Finish**	**Role**
Charlie Chen	BSc	2018	2019	Directed Study Supervisor (3 cr.)
James Yoo	BSc	2018	2019	Directed Study Supervisor (3 cr.)
Braxton Hall	BA	2018	2019	USRA
Lucas Zamprogno	BSc	2017	2017	USRA
Lucas Zamprogno	BSc	2017	2018	Directed Study Supervisor (6 cr.)
Simon Howey	BSc	2017	2018	Directed Study Supervisor (3 cr.)
Michael Sargent	COGS	2016	2017	Directed Study Supervisor (3 cr.)

(continued...)

Student Name	Program	Year		Role
		Start	Finish	
Kelvin Leung	BSc	2016	2016	Directed Study Supervisor (3 cr.)
Dorothy Ordogh	BSc	2016	2016	Directed Study Supervisor (3 cr.)

(f) Graduate Supervisory Committees

Student Name	Program	Year		Role
		Start	Finish	
John Ticknor	UBC-Physics PhD	2024	2024	PhD Examination Chair
Golnaz Gharachorlu	SFU-CS PhD	2023	2023	PhD Examiner
Wen Xiao	UBC-CS PhD	2023	2023	University Examiner
Mira Leung	UBC-CS PhD	2022		PhD RPE Committee
Sijia Gu	UBC-ECE PhD	2022		PhD Committee
Finn Hackett	UBC-CS PhD	2021		PhD RPE Committee
Zack Eberhart	Notre Dame CS PhD	2020	2020	PhD External Examiner
Yingying Wang	UBC-ECE PhD	2020		PhD Committee
Joseph Wonsil	UBC-CS MSc	2020	2021	MSc Committee
Chris Satterfield	UBC-CS MSc	2018	2020	MSc Committee
Giovanni Viviani	UBC-CS PhD	2018	2022	PhD Committee
Joey Eremondi	UBC-CS PhD	2017		PhD Committee
Rob Fuller	UBC-ECE PhD	2018	2022	PhD Committee
Arthur Marques	UBC-CS PhD	2017	2022	PhD Committee
Felipe Schwerter	UBC-CS PhD	2015	2024	PhD Committee
Ildar Muslukhov	UBC-ECE PhD	2017	2017	University Examiner
Joey Eremondi	UBC-CS PhD	2017	2018	PhD RPE Committee
Izabelle Janzen	UBC-CS PhD	2017	2017	PhD RPE Chair
Mihir Nanavati	UBC-CS PhD	2016	2016	PhD Qualifying Exam Chair
Jeffry Goeders	UBC-ECE PhD	2016	2016	PhD University Examiner
Frolin Ocariza	UBC-ECE PhD	2016	2016	PhD University Examiner
Albert Thompson	UBC-CS PhD	2016	2017	PhD Qualifying Exam Committee
Shafique Muhammad	Waterloo-CS PhD	2015	2015	PhD Candidacy Committee
Jinqiu Yang	Waterloo-ECE PhD	2015	2015	PhD Candidacy Committee
Mahsa Emamitaba	Waterloo-ECE PhD	2015	2015	PhD Candidacy Committee
Jon Eyolfson	Waterloo-ECE PhD	2015	2015	PhD Candidacy Committee
Simon Parent	Waterloo-CS MMath	2015	2015	MMath Thesis Committee
Edmund Wong	Waterloo-ECE MEng	2015	2015	MEng Thesis Committee
Weining Liu	Waterloo-ECE MEng	2015	2015	MEng Thesis Committee
Wenbin Ji	Waterloo-ECE MEng	2015	2015	MEng Thesis Committee
Sandeep K Chaudhary	Waterloo-ECE MEng	2015	2015	MEng Thesis Committee
Werner Janic	Mannheim-CS PhD	2014	2014	PhD External Examiner
Sarah Nadi	Waterloo-CS PhD	2012	2014	PhD Supervisory Committee
Karim Ali	Waterloo-CS PhD	2012	2014	PhD Supervisory Committee
Divya Knair	Waterloo-ECE MEng	2013	2013	MEng Thesis Committee
Amhed Ibrihim	Waterloo-CS PhD	2013	2013	PhD Candidacy Committee
Vajihollah Montaghami	Waterloo-ECE PhD	2013	2013	PhD Candidacy Committee
Jonathan Rodriguez	Waterloo-CS PhD	2013	2013	PhD Candidacy Committee
Simon Parent	Waterloo-CS MMath	2013	2013	MMath Thesis Committee
Karim Ali	Waterloo-CS PhD	2012	2012	PhD Candidacy Committee
Sarah Nadi	Waterloo-CS PhD	2012	2012	PhD Candidacy Committee
Eduardo Barrenechea	Waterloo-CS PhD	2012	2012	PhD Candidacy Committee
Wei Wang	Waterloo-CS MMath	2012	2012	MMath Thesis Committee

(continued...)

Student Name	Program	Year		Role
		Start	Finish	
Alec Azad	Waterloo-CS MMath	2012	2012	MMath Thesis Committee
Adrian Filip	Waterloo-CS MMath	2012	2012	MMath Thesis Committee

9. SCHOLARLY AND PROFESSIONAL ACTIVITIES

(a) Areas of Special Interest and Accomplishments

My research impact has been recognized through multiple avenues. I was awarded the 2018 CS-Can/Info-Can *Outstanding Young Computer Science Researcher Award*, recognizing "excellence in research...in Canadian Computer Science departments". In 2016 I received a NSERC Discovery Accelerator (top top 2% of applicants). I have received five ACM SIGSOFT Distinguished Paper Awards at the top two Software Engineering Conferences, ICSE and FSE (top 3% of submissions).In 2024 I received two ACM SIGSOFT Most Influential Paper Awards. These were from ICSE 2014 and FSE 2014, the two top conferences in Software Engineering. My record significantly contributes to UBC's ranking as one of the top Universities in Canada for Software Engineering.[41]

I have served as an Associate Editor for the ACM TSE, the most prestigious journal in Software Engineering (2016-2021) and consistently serve on top-tier program committees. My research has been widely funded beyond the standard NSERC Discovery (and Accelerator) grants. This includes an industrial grant with ABB involving a $375,000 CAD cash contribution, matched by NSERC for a total of $750,000.

(b) Invited Presentations

- *Department Colloquium: Improving Development Tool Impact* May 19, 2022
  University of Zurich, Department of Informatics
  Zurich, VD, Switzerland.
- *Invited Talk: Improving Development Tool Impact* May 18, 2022
  EPFL Center for Digital Trust (EPFL-C4DT)
  Lausanne, VD, Switzerland.
- *Invited Talk: Human-in-the-Loop Assertion Generation* May 12, 2022
  EPFL Hexhive Lab (EPFL-HH)
  Lausanne, VD, Switzerland.
- *Invited Talk: Human-in-the-Loop Assertion Generation* May 5, 2022
  EPFL Dependable Systems Lab (EPFL-DSL)
  Lausanne, VD, Switzerland.
- *Invited Talk: CodeShovel: Constructing Method-Level Source Code Histories.* February 26, 2022
  Innovations in Software Engineering Conference (ISEC)
  Online.
- *Mutation Testing in Practice* December 10, 2015
  Industrial talk at Imprev Corporation
  Bellevue, WA, USA.
- *Recent Advances in Testing* November 17, 2015
  Industrial talk at Tasktop Technologies
  Vancouver, BC, Canada.

[41] CS Rankings: `https://csrankings.org/#/index?soft&ca`

- *Mobile App Development* — May 26, 2014
  CEMC Workshop in Computer Science for Young Women
  Waterloo, Ontario, Canada.
- *The Spec is Right* — December 4, 2013
  CS4U: Computer Science Community Outreach
  Waterloo, Ontario, Canada.
- *Mobile App Development* — May 27, 2013
  CEMC Workshop in Computer Science for Young Women
  Waterloo, Ontario, Canada.
- *Recovering Semantic Links From Source Code Fragments* — November 17, 2013
  Consortium for Software Engineering Research
  Markham, Ontario, Canada.
- *Proactive Detection of Collaboration Conflicts* — June 11, 2012
  Mannheim Department of Computer Science
  Universität Mannheim, Mannheim, Germany.
- *Proactive Detection of Collaboration Conflicts* — March 5, 2012
  Department of Computer Science
  University of Calgary, Calgary, Canada.
- *Invited Talk: Proactive Detection of Collaboration Conflicts* — February 24, 2012
  Indian Software Engineering Conference (ISEC)
  Kanpur IIT, Kanpur, India.
- *Keynote: Improving Comprehension of Source Code Changes* — June 21, 2011
  Consortium for Software Engineering Research
  Kingston, Ontario, Canada.
- *Exposing Opaque Changes by Contrasting Static and Dynamic Analyses* — October 29, 2009
  Department of Computer Science & Engineering Industrial Affiliates Day
  University of Washington, Seattle, USA.
- *Pragmatic Software Reuse* — November 21, 2008
  Departmental Graduate Seminar
  University of Calgary, Calgary, Canada.
- *Deep Intellisense: Re-hydrating Evaporated Knowledge* — December 14, 2007
  Research Overview
  Microsoft Research, Redmond, USA.
- *Using Structural Context to Recommend Source Code Examples* — June 10, 2005
  Departmental Graduate Seminar
  University of Calgary, Calgary, Canada.
- *Using Structural Context to Recommend Source Code Examples* — August 22, 2004
  Departmental Graduate Seminar
  University of British Columbia, Vancouver, Canada.
- *OOVisualizer: Visualizing Software Execution* — September 20, 2000
  Consortium of Canadian Software Engineering Research
  Toronto, Canada.

(c) Other Presentations

- *Measuring and Maintaining Software Quality* — September 27, 2018
  UBC Computer Science Alumni Talk
  Vancouver, BC.

(d) Conference Participation (Organizer, Keynote Speaker, etc.)

- Workshop Chair — International Conference on Automating Software Engineering (ASE) 2019
- Keynote — *Program Comprehension: Who, How, What, and Why* Workshop on Comprehension of Complex Systems (CoCos @ SPLASH) 2017
- Organizing Committee Member — International Symposium on the Foundations of Software Engineering (FSE) 2016
- Organizing Committee Member — European Conference on Object-Oriented Programming (ECOOP) 2016
- Lead Organizer — Canadian Consortium for Software Engineering Research (CSER) 2015
- Workshop Organizer — International Workshop on Recommendation Systems for Software Engineering (RSSE @ ICSE) 2014
- Organizing Committee Member — International Conference on Software Engineering (ICSE) 2014
- Organizing Committee Member — Foundations of Software Engineering (FSE) 2014
- Organizing Committee Member — International Conference on Requirements Engineering (RE) 2014
- Organizing Committee Member — International Conference on Software Engineering (ICSE) 2013
- Organizing Committee — International Conference on Automated Software Engineering (ASE) 2013
- Organizing Committee — International Conference on Software Engineering (ICSE) 2013
- Organizing Committee — International Requirements Engineering Conference (RE) 2013
- Organizing Committee — International Conference on Software Maintenance — Early Research Track (ICSM) 2013
- Organizing Committee — Working Conference on Reverse Engineering (WCRE) 2013
- Keynote — *Improving Comprehension of Source Code Changes* Consortium for Software Engineering Research (CSER) 2011
- Workshop Organizer — International Workshop on Recommendation Systems for Software Engineering (RSSE @ ICSE) 2010

10. SERVICE TO THE UNIVERSITY

(a) UBC Department of Computer Science Committees

- Chair of the Program Experience Committee 2022 – 2025
- Member of the Curriculum Renewal Committee 2024 – 2025
- Assisted Faculty Affairs with Faculty Awards Adjudication 2024
- Member of the Ad Hoc Merit Committee 2022 – 2023
- Member of the Systems/SE EL Recruiting Committee 2022 – 2023
- Member of the Research Faculty Recruiting Committee 2020 – 2021
- Member of the Head Search Committee 2020 – 2021

- Chair of the Industry Partnership Program 2018 – 2020
- Chair of the Compute Committee 2016 – 2018
- Strategic Planning Committee 2017 – 2018
- Instructor Recruiting Committee 2017 – 2017
- Faculty Affairs Committee 2015 – 2016

(b) University of Waterloo School of Computer Science Committees

- SE Curriculum Committee 2014 – 2015
- Commons Committee 2014 – 2015
- Commons Committee 2013 – 2014
- Undergraduate Recruitment 2012 – 2013
- Undergraduate Recruitment 2011 – 2012
- Undergraduate Recruitment 2010 – 2011

(c) Other University Service

- UBC-CS: Promotion Mini-Committee for Ron Garcia 2024
- UBC-CS: Promotion Mini-Committee for Alex Summers 2024
- UBC-CS: Teaching Reports for the Peer Evaluation Committee 2024
- UBC-CS: Promotion Mini-Committee for Mark Schmidt 2023
- UBC-CS: Nominated Elisa Baniassad for her successful CS-Can/Info-Can Excellence in Teaching Award 2023
- UBC-CS: Reappointment Mini-Committee for William Bowman 2022
- UBC-CS: Tenure Mini-Committee for Alex Summers 2020
- UBC-CS: Tenure Mini-Committee for Ivan Beschastnikh 2018
- Expert Panelist on Personal Projects for the Program Experience Committee 2016
- CEMC Workshop in Computer Science for Young Women (half-day session on app development using AppInventor) 2013
- CS4U Presenter 2013
- CEMC Workshop in Computer Science for Young Women (half-day session on app development using TouchDevelop) 2012
- March Break Open House Lab Tour Organizer (2012) 2012
- CS 697 - Graduate Unhandbook Panel 2012
- March Break Open House Lab Tour Organizer 2011
- Fall Open House Lab Tour Organizer 2010

11. SERVICE TO THE COMMUNITY

(a) Memberships on Scholarly Societies

- Association of Computing Machinery (ACM) Member 2002 – present
- ACM SIGSOFT Member 2002 – present
- IEEE Member 2002 – present

(b) Journal Editorships

- Associate Editor — IEEE Transactions on Software Engineering (TSE) 2016 – 2021

(c) Reviewer (Journal, Agency, etc.)

- Reviewer — Empirical Software Engineering Journal (EMSE) 2024
- Reviewer — Transactions on Software Engineering (TSE) 2024
- Reviewer — Empirical Software Engineering Journal (EMSE) 2023
- Reviewer — Empirical Software Engineering Journal (EMSE) 2018
- Reviewer — Empirical Software Engineering Journal (EMSE) 2017
- Reviewer — ACM Transactions on Software Engineering and Methodology (TOSEM) 2016
- Reviewer — ACM Transactions on Software Engineering and Methodology (TOSEM) 2015
- Reviewer — ACM Transactions on Software Engineering and Methodology (TOSEM) 2014
- Reviewer — IEEE Software 2014
- Reviewer — ACM Transactions on Software Engineering and Methodology (TOSEM) 2013
- Reviewer — IEEE Software 2013
- Reviewer — Empirical Software Engineering Journal (ESE) 2013
- Reviewer — IEEE Transactions on Software Engineering (TSE) 2012
- Reviewer — ACM Transactions on Software Engineering and Methodology (TOSEM) 2012
- 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 (ESE) 2011
- Reviewer — IEEE Transactions on Systems, Man, and Cybernetics (SMC) 2010
- Reviewer — ACM Transactions on Software Engineering and Methodology (TOSEM) 2009
- Reviewer — ACM Symposium on User Interface Software and Technology (UIST) 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 (ASE) 2007

(d) Program Committees

- HumanAISE Workshop at the International Conference on Software Engineering (HumanAISE) 2025
- International Conference on Software Engineering, Early Research Advances Track (ICSE-ERA) 2024
- International Conference on Software Engineering, Research Track (ICSE) 2023
- International Conference on Software Engineering, Research Track (ICSE) 2022
- International Conference on Automated Software Engineering (ASE) 2022
- International Conference on Software Engineering, Journal First Track (ICSE) 2021
- Working Conference on Mining Software Repositories (MSR) 2021
- International Working Conference on Software Visualization (VISSOFT) 2021
- Center for Advanced Studies Conferences (CASCON) 2020
- International Conference on Software Analysis, Evolution and Reengineering (SANER), Early Research Track 2020

- Working Conference on Mining Software Repositories (MSR) 2019
- International Conference on Software Engineering (ICSE) 2018
- Foundations of Software Engineering - New Ideas (FSE) 2018
- International Conference on Program Comprehension (ICPC) 2018
- Innovations in Software Engineering Conference (ISEC) 2017
- Working Conference on Mining Software Repositories (MSR) 2017
- International Workshop on API Usage and Evolution (WAPI @ ICSE) 2017
- International Conference on Software Maintenance and Evolution (ICSME), Early Research Advances Track 2017
- Foundations of Software Engineering, Research Demonstrations Track (FSE) 2017
- Centre for Advanced Studies Conference (CASCON) 2017
- International Conference on Software Maintenance and Evolution (ICSME), Early Research Advances Track 2016
- Symposium on the Foundations of Software Engineering, VaR Track (FSE-VaR) 2016
- International Workshop on Release Engineering (RELENG @ FSE) 2016
- International Conference on Software Engineering (ICSE) 2016
- International Conference on Software Analysis, Evolution and Reengineering (SANER) 2016
- International Workshop on Software Analytics (SWAN @ SANER) 2016
- India Software Engineering Conference (ISEC) 2016
- International Conference on Software Reuse (ICSR) 2015
- International Conference on Evaluation and Assessment in Software Engineering (EASE) 2015
- International Workshop on Software Analytics (SWAN @ SANER) 2015
- International Conference on Software Engineering (ICSE) 2015
- International Conference on Software Maintenance and Evolution (ICSME) 2014
- International Workshop on Release Engineering (RELENG @ FSE) 2014
- Working Conference on Reverse Engineering (WCRE) 2014
- International Conference on Program Comprehension (ICPC) 2014
- International Conference on Object Oriented Programming, Systems, Languages, and Applications (OOPSLA) 2013
- Working Conference on Mining Software Repositories (MSR) 2013
- International Workshop on Release Engineering (RELENG @ FSE) 2013
- Working Conference on Reverse Engineering (WCRE) 2012
- Working Conference on Mining Software Repositories (MSR) 2012
- International Conference on Program Comprehension (ICPC) 2012
- Search-Driven Development: Users, Infrastructure, Tools and Evaluation (SUITE @ ICSE) 2012
- Working Conference on Reverse Engineering (WCRE) 2011
- Working Conference on Mining Software Repositories (MSR) 2011
- Symposium on the Foundations of Software Engineering, New Ideas Track (ESEC/FSE) 2011
- International Conference on Software Maintenance, Early Research Track (ICSM) 2011
- Search-Driven Development: Users, Infrastructure, Tools and Evaluation (SUITE @ ICSE) 2011
- International Conference on Program Comprehension (ICPC) 2011
- Working Conference on Mining Software Repositories (MSR) 2011
- Working Conference on Mining Software Repositories (MSR) 2010
- Search-Driven Development: Users, Infrastructure, Tools and Evaluation (SUITE @ ICSE) 2010
- International Workshop on Knowledge Collaboration in Software Development (KCSD) 2009
- Search-Driven Development: Users, Infrastructure, Tools and Evaluation (SUITE @ ICSE) 2009

(e) Award and Funding Committees

- Award Committe Chair — CS—Can | Info—Can PhD Dissertation Award 2025
- Committee Member — CS—Can | Info—Can PhD Dissertation Award 2021–2024
- Reviewer — NSERC CRC 2021
- Reviewer — NSERC CFI JELF 2020
- Reviewer — CRA (Undergraduate Researcher Award) 2020
- Reviewer — SIGSOFT ECRA (Early Career Researcher Award) 2020
- Reviewer — CS-Can/Info Can (Doctoral Thesis Award) 2020
- Reviewer — Royal Society of New Zealand Marsden Fund 2020
- Committee Member — CS—Can | Info—Can PhD Dissertation Award 2019
- Reviewer — SIGSOFT ECRA (Early Career Researcher Award) 2019
- Reviewer — NSERC CRD 2019
- Reviewer — NSERC Discovery 2018
- Reviewer — NSERC Discovery 2017
- Reviewer — NSERC Discovery 2016
- Reviewer — NSERC CRD 2016
- Reviewer — NSERC Strategic 2016
- Reviewer — NSF Software Engineering Panel 2016
- Reviewer — NSERC Strategic 2015
- Reviewer — Fonds de Recherche du Québec (New Researchers Fund) 2014
- Reviewer — NSERC Discovery 2012

(f) External Examiner

- External Ph.D. Examiner for Golnaz Gharachorlu, Simon Fraser University 2023
- External Ph.D. Qualification Examiner for Alexander Lill, University of Zurich 2023
- External Ph.D. Qualification Examiner for Zack Eberhart, Notre Dame University 2020
- External Ph.D. Examiner for Marko Gašparič, Free University of Bozen-Bolzano 2016
- External Ph.D. Examiner for Werner Janic, University of Mannheim 2014

12. AWARDS AND DISTINCTIONS

(a) Awards for Teaching

- Positive Teaching Letter, UBC Dean of Science (CPSC 507 2022W1) 2022
- Department Teaching Award, UBC Computer Science Department (CPSC 310 2017W2) 2018
- Top Instructor, University of Waterloo Computer Science Department (CS 846 2015W2) 2016
- Top Instructor, University of Waterloo Computer Science Department (CS 446 2015W2) 2016
- Top Instructor, University of Waterloo Computer Science Department (CS 446 2014W1) 2015
- Top Instructor, University of Waterloo Computer Science Department (CS 846 2012W1) 2013
- Top Instructor, University of Waterloo Computer Science Department (CS 246 2012W1) 2013
- Top Instructor, University of Waterloo Computer Science Department (CS 846 2011W1) 2012
- Top Instructor, University of Waterloo Computer Science Department (CS 436 2010W2) 2011
- Top Instructor, University of Waterloo Computer Science Department (CS 446 2010W1) 2011

(b) Awards for Scholarship

ICSE and FSE represent the two most prestigious and selective publication venues in software engineering. ACM SIGSOFT Distinguished Paper Awards are awarded to less than 10% of accepted papers (which represents less than 3% of submitted work).

- **ACM SIGSOFT Most Influential Paper Award**: "Are Mutants a Valid Substitute for Real Faults in Software Testing?." *International Symposium on the Foundations of Software Engineering (FSE)* 2024
- **ACM SIGSOFT Most Influential Paper Award**: "Coverage Is Not Strongly Correlated With Test Suite Effectiveness." *International Conference on Software Engineering (ICSE)* 2024
- **Nominated for the Journal of Computer Languages Best Paper Award**: "Language Impact on Productivity for Industrial End Users: A Case Study from Programmable Logic Controllers." *Journal of Computer Languages (COLA)* 2022
- **ACM Distinguished Paper Award**: "CodeShovel: Constructing Method-Level Source Code Histories." *International Conference on Software Engineering (ICSE)* 2021
- **UBC Open Education Resource Champion** *"Outstanding Research Into Teaching Application-based Software Development."* 2019
- **Outstanding Young Computer Science Researcher Award** CS—Can | Info—Can 2018
- **ACM Distinguished Paper Award**: "Are Mutants a Valid Substitute for Real Faults in Software Testing?" *Foundations of Software Engineering (FSE)* 2014
- **ACM Distinguished Paper Award**: "Coverage Is Not Strongly Correlated With Test Suite Effectiveness." *International Conference on Software Engineering (ICSE)* 2014
- **Distinguished Paper Award**: "The Influence of Non-Technical Factors on Code Review." *Working Conference on Reverse Engineering (WCRE)* 2013
- **ACM Distinguished Paper Award**: "Proactive Detection of Collaboration Conflicts." *Foundations of Software Engineering (FSE)* 2011
- Nominated for the CAGS/UMI Distinguished Dissertation Award 2009
- 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**: "A Newbie's Guide to Eclipse APIs." *Working Conference on Mining Software Repositories* 2008
- **Best Presentation Award**: "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**: "Using Structural Context to Recommend Source Code Examples." *International Conference on Software Engineering (ICSE)* 2005
- Departmental Research Award – $8,000 2005
- Departmental Research Award – $8,000 2004

13. OTHER RELEVANT INFORMATION

This section provides some important context on the venues I choose for publication and aspects of my research approach that influence publication velocity.

Publication venues. The majority of Software Engineering research appears in archival-quality conferences. These conferences usually have acceptance rates < 25%. In Software Engineering, the top two conferences are the International Conference on Software Engineering (ICSE), and the Symposium on the Foundations of Software Engineering (FSE), both of which I have published at and have received distinguished paper awards from. The next tranche of SE conference venues, all rated A by CORE, include OOPSLA/SPLASH, ASE, and ICSME.

COVID-19 has increased interest in journal submissions (both within my group and across the field) as in the absence of international meetings to present work, top journals offer more flexible review schedules with high visibility. Top journals in Software Engineering include the Transactions on Software Engineering (TSE, where I have served as an Associate Editor), the Transactions on Software Engineering and Methodology (TOSEM), and the Empirical Software Engineering Journal (EMSE).

For education-related work, I prefer to publish work at SPLASH-E and ICSE-SEET, as both venues focus on teaching students beyond their first year. Also, their parent venues are software engineering conferences, which tend to attract participants who can more directly apply the approaches I have developed a nd evaluated in my courses. That said, SIGCSE remains one of the most prominent and influential educational venues, and I have published there as well.

System building and research throughput. My research often involves building systems to operationalize hypothesis testing that is undertaken with real systems and software engineers. This kind of research approach requires much more stringent tool building than an independent analysis performed by graduate students. There are two factors accounting for this: First, real systems are extremely complex and building tools that work broadly is challenging and time-consuming. Second, industrial engineers are experts at working with tools; if an intervention is of low quality it is impossible to tell if the hypothesis was wrong, or if the tool was just poorly built. Real world evaluations are crucial though for understanding both the importance of a problem and the strengths and weaknesses of the hypotheses we are trying to investigate. Unfortunately, building industrial-strength tools and conducting industrial evaluations significantly lengthens the duration of a research project. Examples of these projects include building interventions for industrial engineers work on their own tasks [ICSE 2021], working with a large number of real-world systems [FSE 2017, ICSE 2021], or approaches that were evaluated with industrial engineers who were working on controlled tasks [ICSE 2018, VISSOFT 2020, TSE 2022].

THE UNIVERSITY OF BRITISH COLUMBIA
Publication Record

Date: April 4, 2025 **Initials:** RH

SURNAME: Holmes **FIRST NAME:** Reid
MIDDLE NAME: Thomas

Publication venue. In Software Engineering the impactful work appears in conferences rather than journals. These top venues typically have acceptance rates ranging between 9-25% and provide the greatest opportunity for my students to present their work to the broadest community of international scholars.

Author order. The author order in my field typically follow the order of contribution, with the exception of the last author. The last author is typically the main supervisor of the project.

Student authors. The bolded author names in the publication lists indicate students and postdocs who I either supervised or co-supervised.

Citation stats. According to Google Scholar (visited April 2nd, 2025):

- Total citations: 6,088
- h-index: 36
- i10-index: 69

1. REFEREED PUBLICATIONS

(a) Journals

[J15] S. I. Ahmad, **S. Chowdhury**, and R. Holmes. "Impact of methodological choices on the analysis of code metrics and maintenance". In: *Journal of Systems and Software* 220 (2025), pp. 112263–112284. DOI: 10.1016/j.jss.2024.112263.

[J14] **F. B. Schwerter**, R. Garcia, R. Holmes, and K. Ali. "Dynamic Program Slices Change How Developers Diagnose Gradual Run-time Type Errors". In: *The Art, Science, and Engineering of Programming (SCP)* 9.3 (2025), pp. 1–29.

[J13] **S. Chowdhury**, G. Uddin, **H. Hemmati**, and R. Holmes. "Method-Level Bug Prediction: Problems and Promises". In: *Transactions on Software Engineering and Methodology (TOSEM)* (Jan. 2024), pp. 1–31. DOI: 10.1145/3640331.

[J12] **N. Ritschel**, A. A. Sawant, D. Weintrop, R. Holmes, A. Bacchelli, R. Garcia, C. K. R, A. Mandal, P. Francis, and D. C. Shepherd. "Training Industrial End-User Programmers With Interactive Tutorials". In: *Software: Practice and Experience (SPE)* 53.3 (2023), pp. 729–747. DOI: 10.1002/spe.3167.

[J11] **N. C. Bradley**, T. Fritz, and R. Holmes. "Sources of Software Development Task Friction". In: *Empirical Software Engineering (EMSE)* 27.7 (2022), pp. 175–215. DOI: 10.1007/s10664-022-10187-6.

[J10] **S. Chowdhury**, R. Holmes, A. Zaidman, and R. Kazman. "Revisiting the Debate: Are Code Metrics Useful for Measuring Maintenance Effort?" In: *Empirical Software Engineering (EMSE)* 27.6 (2022), pp. 158–191. DOI: 10.1007/s10664-022-10193-8.

[J9] **F. Fronchetti**, **N. Ritschel**, R. Holmes, L. Li, M. Soto, R. Jetley, I. Wiese, and D. C. Shepherd. "Language Impact on Productivity for Industrial End Users: A Case Study From Programmable Logic Controllers". In: *Journal of Computer Languages (COLA)* 69 (2022), pp. 101087–101112. DOI: 10.1016/j.cola.2021.101087.
Awarded 2021 Journal of Computer Languages Best Paper Runner Up

[J8] **N. Ritschel**, **F. Fronchetti**, R. Holmes, R. Garcia, and D. C. Shepherd. "Can Guided Decomposition Help End-Users Write Larger Block-Based Programs? A Mobile Robot Experiment". In: *Proceedings ACM on Programming Languages (PACMPL)* 6 (2022), pp. 1–26. DOI: 10.1145/3563296.

[J7] **N. Ritschel**, V. Kovalenko, R. Holmes, R. Garcia, and D. C. Shepherd. "Comparing Block-Based Programming Models for Two-Armed Robots". In: *Transactions on Software Engineering (TSE)* 48.5 (2022), pp. 1630–1643. DOI: 10.1109/TSE.2020.3027255.

[J6] **L. Zamprogno**, **B. Hall**, R. Holmes, and J. M. Atlee. "Dynamic Human-in-the-Loop Assertion Generation". In: *Transactions on Software Engineering (TSE)* (2022), pp. 1–15. DOI: 10.1109/TSE.2022.3217544.

[J5] **O. Baysal**, O. Kononenko, R. Holmes, and M. W. Godfrey. "Investigating Technical and Non-Technical Factors Influencing Modern Code Review". In: *Empirical Software Engineering (EMSE)* 21.3 (2016), pp. 932–959. DOI: 10.1007/s10664-015-9366-8.

[J4] **O. Baysal**, R. Holmes, and M. W. Godfrey. "Developer Dashboards: The Need for Qualitative Analytics". In: *IEEE Software* 30.4 (2013), pp. 46–52. DOI: 10.1109/MS.2013.66.

[J3] Y. Brun, R. Holmes, M. D. Ernst, and D. Notkin. "Early Detection of Collaboration Conflicts and Risks". In: *Transactions on Software Engineering (TSE)* 39.10 (2013), pp. 1358–1375. DOI: 10.1109/TSE.2013.28.

[J2] R. Holmes and R. J. Walker. "Systematizing Pragmatic Software Reuse". In: *Transactions on Software Engineering and Methodology (TOSEM)* 21.4 (2012), pp. 1–44. DOI: 10.1145/2377656.2377657.

[J1] R. Holmes, R. J. Walker, and G. C. Murphy. "Approximate Structural Context Matching: An Approach to Recommend Relevant Examples". In: *Transactions on Software Engineering (TSE)* 32.12 (2006), pp. 952–970. DOI: 10.1109/TSE.2006.117.

(b) Conference Proceedings

[C51] **N. C. Bradley**, T. Fritz, and R. Holmes. "Enabling Scalable Proactive Workspaces With Environment-Wide Context". In: *In Proceedings of the International Conference on the Foundations of Software Engineering (FSE), Ideas, Visions, and Reflections Track (FSE-IVR)*. 2025, p. 5.

[C50] N. Rao, B. Vasilescu, and R. Holmes. "From Overload to Insight: Bridging Code Search and Code Review with LLMs". In: *In Proceedings of the International Conference on the Foundations of Software Engineering (FSE), Ideas, Visions, and Reflections Track (FSE-IVR)*. 2025, p. 5.

[C49] **N. C. Bradley**, T. Fritz, and R. Holmes. "Supporting Web-based API Searches in the IDE Using Signatures". In: *Proceedings of the International Conference on Software Engineering (ICSE)*. Lisbon, Portugal, 2024, pp. 1–12. DOI: 10.1145/3597503.3639089.

[C48] **F. Fronchetti**, **N. Ritschel**, L. Schorr, C. Barfield, G. Chang, R. Spinola, R. Holmes, and D. Shepherd. "Block-based Programming for Two-Armed Robots: A Comparative Study". In: *Proceedings of the International Conference on Software Engineering (ICSE)*. Lisbon, Portugal, 2024, pp. 1–12. DOI: 10.1145/3597503.3623329.

[C47] **K. Kerr** and R. Holmes. "Age-Inclusive Integrated Development Environments for End-Users." In: *Proceedings of the Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*. Liverpool, United Kingdom, 2024, pp. 289–299. DOI: 10.1109/VL/HCC60511.2024.00039.

[C46] **R. Rutishauser**, A. N. Meyer, R. Holmes, and T. Fritz. "Semi-Automatic, Inline and Collaborative Web Page Code Curations". In: *Proceedings of the International Conference on Software Engineering (ICSE)*. Melbourne, Australia, 2023, pp. 1–12.

[C45] **S. Chowdhury**, G. Uddin, and R. Holmes. "An Empirical Study on Maintainable Method Size in Java". In: *Proceedings of the International Conference on Mining Software Repositories (MSR)*. Pittsburgh, Pennsylvania, 2022, pp. 252–264. DOI: 10.1145/3524842.3527975.

[C44] **R. Araújo** and R. Holmes. "Lightweight Self-Adaptive Configuration Using Machine Learning". In: *Proceedings of the International Conference on Computer Science and Software Engineering (CASCON)*. Toronto, Canada, 2021, pp. 133–142.

[C43] E. Baniassad, **L. Zamprogno**, **B. Hall**, and R. Holmes. "STOP THE (AUTOGRADER) INSANITY: Regression Penalties to Deter Autograder Overreliance". In: *Proceedings of the Technical Symposium on Computer Science Education (SIGCSE)*. Location: Virtual, 2021, pp. 1062–1068. DOI: 10.1145/3408877.3432430.

[C42] Y. T. Chen, R. Gopinath, A. Tadakamalla, M. D. Ernst, R. Holmes, G. Fraser, P. Ammann, and R. Just. "Revisiting the Relationship between Fault Detection, Test Adequacy Criteria, and Test Set Size". In: *Proceedings of the International Conference on Automated Software Engineering (ASE)*. Location: Virtual, 2021, pp. 237–249. DOI: 10.1145/3324884.3416667.

[C41] **F. Grund**, **S. Chowdhury**, **N. C. Bradley**, **B. Hall**, and R. Holmes. "CodeShovel: Constructing Method-Level Source Code Histories". In: *Proceedings of the International Conference on Software Engineering (ICSE)*. Location: Virtual, 2021, pp. 1510–1522. DOI: 10.1109/ICSE43902.2021.00135.
ACM SIGSOFT Distinguished Paper Award

[C40] **B. Hall**, **N. Heyl**, E. Baniassad, M. Allen, and R. Holmes. "The Efficacy of Online Office Hours: An Experience Report". In: *Proceedings of the Systems, Programming, Languages, and Applications: Software for Humanity, Symposium for SE/PL Computing Education (SPLASH-E)*. Chicago, USA, 2021, pp. 59–64. DOI: 10.1145/3484272.3484966.

[C39] **X. Liu** and R. Holmes. "Exploring Developer Preferences for Visualizing External Information Within Source Code Editors". In: *Proceedings of the Working Conference on Software Visualization (VISSOFT)*. Location: Virtual, 2020, pp. 27–37. DOI: 10.1109/VISSOFT51673.2020.00008.

[C38] **L. Zamprogno**, R. Holmes, and E. Baniassad. "Nudging Student Learning Strategies Using Formative Feedback in Automatically Graded Assessments". In: *Proceedings of the Systems, Programming, Languages, and Applications: Software for Humanity, Symposium for SE/PL Computing Education (SPLASH-E)*. Location: Virtual, 2020, pp. 1–11. DOI: 10.1145/3426431.3428654.

[C37] E. Baniassad, I. Beschastnikh, R. Holmes, G. Kiczales, and M. Allen. "Learning to Listen for Design". In: *Proceedings of the International Conference on Systems, Programming, Languages, and Applications, Onwards! Essays Track (SPLASH-Onward)*. Athens, Greece, 2019, pp. 179–186. DOI: 10.1145/3359591.3359738.

[C36] **Q. Hanam**, A. Mesbah, and R. Holmes. "Aiding Code Change Understanding with Semantic Change Impact Analysis". In: *Proceedings of the International Conference on Software Maintenance and Evolution (ICSME)*. Cleveland, USA, 2019, pp. 202–212. DOI: 10.1109/ICSME.2019.00031.

[C35] W. Zou, W. Zhang, **X. Xia**, R. Holmes, and Z. Chen. "Branch Use in Practice: A Large-Scale Empirical Study of 2,923 Projects on GitHub". In: *Proceedings of the International Conference on Software Quality, Reliability and Security (QRS)*. Sofia, Bulgaria, 2019, pp. 306–317. DOI: 10.1109/QRS.2019.00047.

[C34] **N. C. Bradley**, T. Fritz, and R. Holmes. "Context-Aware Conversational Developer Assistants". In: *Proceedings of the International Conference on Software Engineering (ICSE)*. Gothenburg, Sweden, 2018, pp. 993–1003. DOI: 10.1145/3180155.3180238.

[C33] R. Holmes, M. Allen, and M. Craig. "Dimensions of Experientialism for Software Engineering Education". In: *Proceedings of the International Conference on Software Engineering, Software Engineering Education and Training Track (ICSE-SEET)*. Gothenburg, Sweden, 2018, pp. 31–39. DOI: 10.1145/3183377.3183380.

[C32] **A. Labuschagne**, **L. Inozemtseva**, and R. Holmes. "Measuring the Cost of Regression Testing in Practice: A Study of Java Projects Using Continuous Integration". In: *Proceedings of the Joint Meeting on Foundations of Software Engineering (ESEC/FSE)*. Paderborn, Germany, 2017, pp. 821–830. DOI: 10.1145/3106237.3106288.

[C31] **A. Labuschagne** and R. Holmes. "Do Onboarding Programs Work?" In: *Proceedings of the International Conference on Mining Software Repositories (MSR)*. Florence, Italy, 2015, pp. 381–385. DOI: 10.1109/MSR.2015.45.

[C30] **O. Baysal**, R. Holmes, and M. W. Godfrey. "No Issue Left Behind: Reducing Information Overload in Issue Tracking". In: *Proceedings of the International Symposium on Foundations of Software Engineering (FSE)*. Hong Kong, China, 2014, pp. 666–677. DOI: 10.1145/2635868.2635887.

[C29] **Q. Hanam**, L. Tan, R. Holmes, and P. Lam. "Finding Patterns in Static Analysis Alerts: Improving Actionable Alert Ranking". In: *Proceedings of the International Conference on Mining Software Repositories (MSR)*. Hyderabad, India, 2014, pp. 152–161. DOI: 10.1145/2597073.2597100.

[C28] R. Holmes, M. Craig, K. Reid, and E. Stroulia. "Lessons Learned Managing Distributed Software Engineering Courses". In: *Proceedings of the International Conference on Software Engineering, Software Engineering Education and Training Track (ICSE-SEET)*. Hyderabad, India, 2014, pp. 321–324. DOI: 10.1145/2591062.2591160.

[C27] **L. Inozemtseva** and R. Holmes. "Coverage is Not Strongly Correlated with Test Suite Effectiveness". In: *Proceedings of the International Conference on Software Engineering (ICSE)*. Hyderabad, India, 2014, pp. 435–445. DOI: 10.1145/2568225.2568271.
ACM SIGSOFT Distinguished Paper Award
ACM SIGSOFT 2024 Most Influential Paper Award

[C26] **L. Inozemtseva**, **S. Subramanian**, and R. Holmes. "Integrating Software Project Resources Using Source Code Identifiers". In: *Proceedings of the International Conference on Software Engineering, New Ideas and Emerging Results Track (ICSE-NIER)*. Hyderabad, India, 2014, pp. 400–403. DOI: 10.1145/2591062.2591108.

[C25] R. Just, D. Jalali, **L. Inozemtseva**, M. D. Ernst, R. Holmes, and G. Fraser. "Are Mutants a Valid Substitute for Real Faults in Software Testing?" In: *Proceedings of the International Symposium on Foundations of Software Engineering (FSE)*. Hong Kong, China, 2014, pp. 654–665. DOI: 10.1145/2635868.2635929.
ACM SIGSOFT Distinguished Paper Award
ACM SIGSOFT 2024 Most Influential Paper Award

[C24] O. Kononenko, **O. Baysal**, R. Holmes, and M. W. Godfrey. "Mining Modern Repositories with Elasticsearch". In: *Proceedings of the International Conference on Mining Software Repositories (MSR)*. Hyderabad, India, 2014, pp. 328–331. DOI: 10.1145/2597073.2597091.

[C23] **S. Subramanian**, **L. Inozemtseva**, and R. Holmes. "Live API Documentation". In: *Proceedings of the International Conference on Software Engineering (ICSE)*. Hyderabad, India, 2014, pp. 643–652. DOI: 10.1145/2568225.2568313.

[C22] **O. Baysal**, R. Holmes, and M. W. Godfrey. "Situational Awareness: Personalizing Issue Tracking Systems". In: *Proceedings of the International Conference on Software Engineering, New Ideas and Emerging Results Track (ICSE-NIER)*. https://dl.acm.org/doi/10.5555/2486788.2486957, 2013, pp. 1185–1188.

[C21] **O. Baysal**, O. Kononenko, R. Holmes, and M. W. Godfrey. "The Influence of Non-Technical Factors on Code Review". In: *Proceedings of the International Working Conference on Reverse Engineering (WCRE)*. Koblenz, Germany, 2013, pp. 122–131. DOI: 10.1109/WCRE.2013.6671287.
Distinguished Paper Award

[C20] **H. Hemmati**, S. Nadi, **O. Baysal**, O. Kononenko, W. Wang, R. Holmes, and M. W. Godfrey. "The MSR Cookbook: Mining a Decade of Research". In: *Proceedings of the International Conference on Mining Software Repositories (MSR)*. San Francisco, USA, 2013, pp. 343–352. DOI: 10.1109/MSR.2013.6624048.

[C19] **L. Inozemtseva**, **H. Hemmati**, and R. Holmes. "Using Fault History to Improve Mutation Reduction". In: *Proceedings of the International Symposium on Foundations of Software Engineering, New Ideas and Emerging Results Track (FSE-NIER)*. Saint Petersburg, Russia, 2013, pp. 639–642. DOI: 10.1145/2491411.2494586.

[C18] **S. Subramanian** and R. Holmes. "Making Sense of Online Code Snippets". In: *Proceedings of the International Conference on Mining Software Repositories (MSR)*. San Francisco, USA, 2013, pp. 85–88. DOI: 10.1109/MSR.2013.6624012.

[C17] **O. Baysal**, R. Holmes, and M. W. Godfrey. "Mining Usage Data and Development Artifacts". In: *Proceedings of the International Conference on Mining Software Repositories (MSR)*. Zurich, Switzerland, 2012, pp. 98–107. DOI: 10.1109/MSR.2012.6224305.

[C16] **O. Baysal**, O. Kononenko, R. Holmes, and M. W. Godfrey. "The Secret Life of Patches: A Firefox Case Study". In: *Proceedings of the International Working Conference on Reverse Engineering (WCRE)*. Kingston, Canada, 2012, pp. 447–455. DOI: 10.1109/WCRE.2012.54.

[C15] O. Kononenko, **D. Dietrich**, **R. Sharma**, and R. Holmes. "Automatically Locating Relevant Programming Help Online". In: *Proceedings of the Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*. Innsbruck, Austria, 2012, pp. 127–134. DOI: 10.1109/VLHCC.2012.6344497.

[C14] K. Muşlu, Y. Brun, R. Holmes, M. D. Ernst, and D. Notkin. "Improving IDE Recommendations by Considering Global Implications of Existing Recommendations". In: *Proceedings of*

the International Conference on Software Engineering, New Ideas and Emerging Results Track (ICSE-NIER). Zurich, Switzerland, 2012, pp. 1349–1352. DOI: 10.1109/ICSE.2012.6227082.

[C13] K. Muşlu, Y. Brun, R. Holmes, M. D. Ernst, and D. Notkin. "Speculative Analysis of Integrated Development Environment Recommendations". In: *Proceedings of the Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA)*. Tucson, USA, 2012, pp. 669–682. DOI: 10.1145/2384616.2384665.

[C12] Y. Brun, R. Holmes, M. D. Ernst, and D. Notkin. "Proactive Detection of Collaboration Conflicts". In: *Proceedings of the Joint Meeting on Foundations of Software Engineering (ESEC/FSE)*. Szeged, Hungary, 2011, pp. 168–178. DOI: 10.1145/2025113.2025139.
ACM SIGSOFT Distinguished Paper Award

[C11] R. Holmes and D. Notkin. "Identifying Program, Test, and Environmental Changes That Affect Behaviour". In: *Proceedings of the International Conference on Software Engineering (ICSE)*. Honolulu, USA, 2011, pp. 371–380. DOI: 10.1145/1985793.1985844.

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