Christian Bird

Principal Researcher

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Research Interests

Empirical Software Engineering, Open Source Software communities, Communication and Collaboration in Software Engineering, Code Review, Branching in Source Code Repositories, Release Engineering

Education

2010 **Ph.D. Computer Science**, *University of California*, Davis, California.
Advisor: Premkumar Devanbu
Thesis: "Sociotechnical Collaboration and Coordination in Open Source Software"

2008 **M.S. Computer Science**, *University of California*, Davis, California.
Advisor: Premkumar Devanbu

2003 **B.S. Computer Science**, *Brigham Young University*, Provo, Utah.

Honors and Awards

30 Year Highlight (26 most influential papers in the past 30 years), *ISSRE*, "Putting It All Together: Using Socio-Technical Networks to Predict Failures", 2019.

Test of Time Award (10 years), *ESEC/FSE*, "Fair and balanced?: bias in bug-fix datasets", 2019.

Most Influential Paper Award (10 years), *International Conference on Mining Software Repositories*, "The Promises and Perils of Mining Git", 2019.

IEEE Software ICSE Software Engineering in Practice Best Paper Award, *International Conference on Software Engineering*, "Software Engineering for Machine Learning: A Case Study", 2019.

Distinguished Reviewer, *International Conference on Software Engineering*, 2019.

Test of Time Award (10 years), *ESEC/FSE*, "Latent Social Structure in Open Source Projects", 2018.

ACM SIGSOFT Early Career Research Award, *Awarded at ICSE 2017*.

Most Influential Paper Award (10 years), *International Conference on Mining Software Repositories*, "Mining Email Social Networks", 2016.

Distinguished Reviewer, *International Conference on Software Engineering*, 2016.

Distinguished Reviewer, *IEEE/ACM International Conference on Automated Software Engineering*, 2015.

ACM SIGSOFT Distinguished Paper, *ACM SigSoft Symposium on Foundations of Software Engineering*, "Learning Natural Coding Conventions", 2014.

ACM SIGSOFT Distinguished Paper and ISSTA Best Paper, *ACM SigSoft International Symposium on Software Testing and Analysis*, "Collecting a Heap of Shapes", 2013.

Distinguished Referee, *ACM Transactions on Software Engineering and Methodology*, 2011-2012.

ACM SIGSOFT Distinguished Paper, *ACM SigSoft Symposium on Foundations of Software Engineering*, "Assessing the Value of Branches with What-If Analysis", 2012.

ACM SIGSOFT Distinguished Paper, *International Conference on Software Engineering*, "Does Distributed Development Affect Software Quality? An Empirical Case Study of Windows Vista", 2009.

Mining Software Repositories Best Paper Award, *International Working Conference on Mining Software Repositories*, "Clones: What *is* that smell?", 2010.

Best Student Talk, *Mining Software Archives*, "The Effect of Change Semantics on Coordination Requirements", 2010.

Best Graduate Researcher Award, *U.C. Davis, Dept. of Computer Science*, 2008 – 2009.

Dean's List, *Brigham Young University*, 1996, 2001, 2002.

US National Merit Scholar and Scholarship, Awarded for complete undergraduate career, 1996.

Boy Scouts of America: Eagle Scout Rank, 1996.

Books

Christian Bird, Tim Menzies, and Thomas Zimmermann, Eds. *The Art and Science of Analyzing Software Data*. Morgan Kauffman, 2015

Special Issues Editted

Special Issue on Mining Software Repositories 2015, *Journal of Empirical Software Engineering*, 2018.

Special Issue on Release Engineering 3.0, *IEEE Software*, 2018.

Special Issue on Program Comprehension 2014, *Journal of Empirical Software Engineering*, 2017.

Special Issue on Crowdsourcing, *IEEE Software*, 2017.

Special Issue on Release Engineering, *IEEE Software*, 2015.

Book Chapters

Christian Bird. Interviews. In *Perspectives on Data Science for Software Engineering*, T. Menzies, L. Williams, and T. Zimmermann, Eds. Morgan Kaufmann, 2016

Christian Bird. Don't embarrass yourself: Beware of bias in your data. In *Perspectives on Data Science for Software Engineering*, T. Menzies, L. Williams, and T. Zimmermann, Eds. Morgan Kaufmann, 2016

Christian Bird. Conway's Corollary. In *Making Software: What Really Works, and Why We Believe It*, A. Oram and G. Wilson, Eds. O'Reilly, 2010

Refereed Publications

ICSE 2020 Jordan Henkel, Christian Bird, Shuvendu K. Lahiri, and Thomas Reps. Learning from, Understanding, and Supporting DevOps Artifacts for Docker. In *Proceedings of the International Conference on Software Engineering*, 2020

MSR 2020 Jordan Henkel, Christian Bird, Shuvendu K. Lahiri, and Thomas Reps. A Dataset of Dockerfiles. In *Proceedings of the International Conference on Mining Software Repositories*, 2020

HCI 2020 Ei Pa Pa Pe-Than, Alexander Nolte, Anna Filippova, Christian Bird, Steve Scallen, and James Herbsleb. Corporate Hackathons, How and Why? A Multiple Case Study of Motivation, Projects Proposal and Selection, Goal Setting, Coordination, and Outcomes. *Human-Computer Interaction (Journal)*, to appear

NSDI 2020 Sonu Mehta, Ranjita Bhagwan, Rahul Kumar, Chetan Bansal, Chandra Shekhar Maddila, B. Ashok, Sumit Asthana, Christian Bird, and Aditya Kumar. Rex: Preventing bugs and misconfiguration in large services using correlated change analysis. In *17th USENIX Symposium on Networked Systems Design and Implementation, NSDI 2020, Santa Clara, CA, USA, February 25-27, 2020*, 2020, USENIX Association, pp. 435–448

TSE 2020 Margaret-Anne Storey, Tom Zimmermann, Christian Bird, Jacek Czerwonka, Brendan Murphy, and Eirini Kalliamvakou. Towards a Theory of Software Developer Job Satisfaction and Perceived Productivity. *IEEE Transactions on Software Engineering*, January 2020

TSE 2020 Pavneet Singh Kochhar, Eirini Kalliamvakou, Nachiappan Nagappan, Thomas Zimmermann, and Christian Bird. Moving from Closed to Open Source: Observations from Six Transitioned Projects to GitHub. *IEEE Transactions on Software Engineering*, to appear 2020

FSE 2019 Sumit Asthana, Rahul Kumar, Ranjita Bhagwan, Christian Bird, Chetan Bansal, Chandra Shekhar Maddila, Sonu Mehta, and B. Ashok. Whodo: automating reviewer suggestions at scale. In *Proceedings of the ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (Industry Track)*, 2019, pp. 937–945

ICSE 2019 Saleema Amershi, Andrew Begel, Christian Bird, Robert DeLine, Harald Gall, Ece Kamar, Nachiappan Nagappan, Besmira Nushi, and Thomas Zimmermann. Software Engineering for Machine Learning: A Case Study. In *Proceedings of the International Conference on Software Engineering (Software Engineering In Practice Track)*, 2019, IEEE

TSE 2019 Vladimir Kovalenko, Nava Tintarev, Evgeny Pasynkov, Christian Bird, and Alberto Bacchelli. Does Reviewer Recommendation Help Developers? *IEEE Transactions on Software Engineering*, to appear 2019

TSE 2019 Brittany Johnson, Thomas Zimmermann, and Christian Bird. The Effect of Work Environments on Productivity and Satisfaction of Software Engineers. *IEEE Transactions on Software Engineering*, to appear 2019

TSE 2019 Andre N. Meyer, Earl T. Barr, Christian Bird, and Thomas Zimmermann. Today was a Good Day: The Daily Life of Software Developers. *IEEE Transactions on Software Engineering*, to appear 2019

CHI 2018 Alexander Nolte, Ei Pa Pa Pe-Than, Anna Filippova, Christian Bird, Steve Scallen, and James D Herbsleb. You Hacked and Now What?:-Exploring Outcomes of a Corporate Hackathon. *Proceedings of the ACM on Human-Computer Interaction 2*, CSCW, 2018, 129

ACM Queue Jacek Czerwonka, Michaela Greiler, Christian Bird, Lucas Panjer, and Terry Coatta. Codeflow: Improving the code review process at microsoft. *ACM Queue 16*, 5, 2018, 20

IEEE Software 2018 Ei Pa Pa Pe Than, Alexander Nolte, Anna Filippova, Christian Bird, Steve Scallen, and James Herbsleb. Designing Corporate Hackathons With a Purpose. *IEEE Software*, Early Access 2018

FSE 2018 Vincent J Hellendoorn, Christian Bird, Earl T Barr, and Miltiadis Allamanis. Deep learning type inference. In *Proceedings of the 2018 26th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering*, 2018, ACM, pp. 152–162

IEEE Software 2018 Laura Macleod, Michaela Greiler, Margaret-Anne Storey, Christian Bird, and Jacek Czerwonka. Code Reviewing in the Trenches: Understanding Challenges, Best Practices, and Tool Needs. *IEEE Software*, 2017

TSE 2018 Miltiadis Allamanis, Earl Barr, Christian Bird, Premkumar Devanbu, Mark Marron, and Charles Sutton. Mining Semantic Loop Idioms from Big Code. *IEEE Transactions on Software Engineering*, 2018

CHI 2018 Austin Z Henley, KIvanç Muçlu, Maria Christakis, Scott D Fleming, and Christian Bird. Cfar: A tool to increase communication, productivity, and review quality in collaborative code reviews. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, 2018, ACM, p. 157

TSE 2018 Eirini Kalliamvakou, Christian Bird, Thomas Zimmermann, Andrew Begel, Robert DeLine, and Daniel M. German. What Makes a Great Manager of Software Engineers? *IEEE Transactions on Software Engineering*, 2018

ESEM 2017 Denae Ford, Thomas Zimmermann, Christian Bird, and Nachiappan Nagappan. Characterizing Software Engineering Work with Personas Based on Knowledge Worker Actions. In *Proceedings of the International Symposium on Empirical Software Engineering and Measurement*, 2017, ACM/IEEE

ICSE 2017 Zheng Gao, Christian Bird, and Earl T. Barr. To Type or not to Type: On the Effectiveness of Static typing for JavaScript. In *Proceedings of the 39th International Conference on Software Engineering*, 2017, IEEE. (16%)

TSE 2017 Amiangshu Bosu, Jeffrey C. Carver, Christian Bird, Jonathan Orbeck, and Chris Chockley. Process Aspects and Social Dynamics of Contemporary Code Review: Insights from Open Source Development and Industrial Practice at Microsoft. *IEEE Transactions on Software Engineering*, 2017

ASE 2016 Maria Christakis, and Christian Bird. What developers want and need from program analysis: an empirical study. In *Proceedings of the 31st IEEE/ACM International Conference on Automated Software Engineering*, 2016, ACM, pp. 332–343

ICSE 2016 Irene Manotas, Christian Bird, Rui Zhang, David Shepherd, Will Snipes, Ciera Jaspan, Caitlin Sadowski, Lori Pollock, and James Clause. An Empirical Study of Practitioners' Perspectives on Green Software Engineering. In *Proceedings of the 38th International Conference on Software Engineering*, 2016, ACM. (19%)

ICSE 2016 Premkumar Devanbu, Thomas Zimmermann, and Christian Bird. Belief and Evidence in Empirical Software Engineering. In *Proceedings of the 38th International Conference on Software Engineering*, 2016, ACM. (19%)

ICSE 2016 Michael Washburn, Pvithra Sathiyanarayanan, Meiyappan Nagappan, Thomas Zimmermann, and Christian Bird. What Went Right and What Went Wrong: An Analysis of 155 Postmortems from Game Development. In *Proceedings of the 38th International Conference on Software Engineering (Software Engineering in Practice Track)*, 2016, ACM. (26%)

CHASE 2016 Edward K Smith, Christian Bird, and Thomas Zimmermann. Beliefs, practices, and personalities of software engineers: a survey in a large software company. In *Proceedings of the 9th International Workshop on Cooperative and Human Aspects of Software Engineering*, 2016, ACM, pp. 15–18

TSE 2016 Motahareh Bahrami Zanjani, Huzefa Kagdi, and Christian Bird. Automatically Recommending Peer Reviewers in Modern Code Review. *IEEE Transactions on Software Engineering 42*, 6, June 2016, 530–543

FSE 2015 Miltiadis Allamanis, Earl T. Barr, Christian Bird, and Charles Sutton. Suggesting Accurate Method and Class Names. In *Proceedings of the the joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on The Foundations of Software Engineering (ESEC/FSE)*, 2015, ACM. (25%)

FSE 2015 Juliana Saraiva, Christian Bird, and Thomas Zimmermann. Products, Developers, and Milestones: How Should I Build My N-Gram Language Model. In *Proceedings of the the joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on The Foundations of Software Engineering (ESEC/FSE) Industry Track*, 2015, ACM. (33%)

ICSE 2015 Edward K. Smith, Christian Bird, and Thomas Zimmermann. Build it yourself! Homegrown Tools in a Large Software Company. In *Proceedings of the 37th International Conference on Software Engineering*, 2015, IEEE. (19%)

ICSE 2015 Michael Barnett, Christian Bird, Joao Brunet, and Shuvendu K. Lahiri. Helping Developers Help Themselves: Automatic Decomposition of Code Review Changesets. In *Proceedings of the 37th International Conference on Software Engineering*, 2015, IEEE. (19%)

MSR 2015 Christian Bird, Trevor Carnahan, and Michaela Greiler. Lessons Learned from Building and Deploying a Code Review Analytics Platform. In *Proceedings of the International Conference on Mining Software Repositories*, 2015, IEEE. (30%)

MSR 2015 Amiangshu Bosu, Michaela Greiler, and Christian Bird. Characteristics of Useful Code Reviews: An Empirical Study at Microsoft. In *Proceedings of the International Conference on Mining Software Repositories*, 2015, IEEE. (30%)

MSR 2015 Baishakhi Ray, Meiyappan Nagappan, Christian Bird, Nachiappan Nagappan, and Thomas Zimmermann. The Uniqueness of Changes: Characteristics and Applications. In *Proceedings of the International Conference on Mining Software Repositories*, 2015, IEEE. (30%)

MSR 2015 Motahareh Bahrami Zanjani, Huzefa Kagdi, and Christian Bird. Using Developer-Interaction Trails to Triage Change Requests. In *Proceedings of the International Conference on Mining Software Repositories*, 2015, IEEE. (30%)

TSE 2015 Emerson Murphy-Hill, Thomas Zimmermann, Christian Bird, and Nachiappan Nagappan. The Design Space of Bug Fixes and How Developers Navigate It. *IEEE Transactions on Software Engineering*, 2015

FSE 2014 Miltiadis Allamanis, Earl T. Barr, Christian Bird, and Charles Sutton. Learning Natural Coding Conventions. In *Proceedings of the 22nd International Symposium on Foundations of Software Engineering*, 2014, ACM. (22%)

ESEM 2014 Ashish Gupta, Thomas Zimmermann, Christian Bird, Nachiappan Nagappan, Thirumalesh Bhat, and Syed Emran. Mining Energy Traces to Aid in Software Development: An Empirical Case Study. In *Proceedings of the International Symposium on Empirical Software Engineering and Measurement*, 2014, ACM/IEEE

ESE 2014 Abram Hindle, Christian Bird, Thomas Zimmermann, and Nachiappan Nagappan. Do topics make sense to managers and developers? *Empirical Software Engineering*, June 2014, 1–37

ICSE 2014 Shaun Phillips, Thomas Zimmermann, and Christian Bird. Understanding and Improving Software Build Teams. In *Proceedings of the International Conference on Software Engineering*, 2014, IEEE. (20%)

ICSE 2014 Kivanç Muşlu, Christian Bird, Nachiappan Nagappan, and Jacek Czerwonka. Transition from Centralized to Decentralized Version Control Systems: A Case Study on Reasons, Barriers, and Outcomes. In *Proceedings of the International Conference on Software Engineering*, 2014, IEEE. (20%)

ICSE 2014 Christian Bird, Venkatesh Prasad Ranganath, Thomas Zimmermann, Nachiappan Nagappan, and Andreas Zeller. Extrinsic influence factors in software reliability: A study of 200,000 windows machines. In *Proceedings of the International Conference on Software Engineering (SEIP Track)*, 2014, IEEE. (21%)

FSE 2013 Meiyappan Nagappan, Thomas Zimmermann, and Christian Bird. Diversity in software engineering research. In *Proceedings of the the joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on The Foundations of Software Engineering (ESEC/FSE)*, 2013, ACM. (20%)

FSE 2013 Peter C. Rigby, and Christian Bird. Convergent software peer review practices. In *Proceedings of the the joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on The Foundations of Software Engineering (ESEC/FSE)*, 2013, ACM. (20%)

ESEM 2013 Brendan Murphy, Christian Bird, Thomas Zimmermann, Laurie Williams, Nachiappan Nagappan, and Andrew Begel. Have Agile Techniques been the Silver Bullet for Software Development at Microsoft. In *Proceedings of the Seventh International Symposium on Empirical Software Engineering and Measurement*, 2013, ACM/IEEE. (28%)

ISSTA 2013 Earl T. Barr, Christian Bird, and Mark Marron. Collecting a Heap of Shapes. In *Proceedings of the International Symposium on Software Testing and Analysis*, 2013, ACM. (25% Best Paper Award 2%)

IEEE Software 2013 Robert Musson, Jacqueline Richards, Danyel Fisher, Christian Bird, Brian Bussone, and Sandipan Ganguly. Leveraging the Crowd: How 48,000 Users Helped Improve Lync Performance. *IEEE Software*, 2013

ECSCW 2013 Richard Harper, Christian Bird, Thomas Zimmermann, and Brendan Murphy. Dwelling in Software: aspects of the felt-life of engineers in large software projects. In *Proceedings of the European Conference on Computer-Supported Cooperative Work*, 2013

ICSE 2013 Alberto Bacchelli, and Christian Bird. Expectations, outcomes, and challenges of modern code review. In *Proceedings of the International Conference on Software Engineering*, 2013, IEEE. (18% nominated for Distinguished Paper 4%)

ICSE 2013 Emerson Murphy-Hill, Thomas Zimmermann, Christian Bird, and Nachiappan Nagappan. The design of bug fixes. In *Proceedings of the International Conference on Software Engineering*, 2013, IEEE. (18%)

ICSE 2013 Ekrem Kocaguneli, Thomas Zimmermann, Christian Bird, Nachiappan Nagappan, and Tim Menzies. Distributed development considered harmful? In *Proceedings of the International Conference on Software Engineering (Software Engineering in Practice Track)*, 2013, IEEE. (20%)

RELENG 2013 Peter C. Rigby, Earl T. Barr, Christian Bird, Premkumar Devanbu, and Daniel M. German. What Effect does Distributed Version Control have on OSS Project Organization. In *Proceedings of the International Workshop on Release Engineering*, 2013, IEEE

MSR 2013 Murtuza Mukadam, Christian Bird, and Peter C. Rigby. Gerrit software code review data from android. In *Proceedings of the International Working Conference on Mining Software Repositories (Data Track)*, 2013, IEEE

CHASE 2013 Edward Smith, Robert Loftin, Emerson Murphy-Hill, Christian Bird, and Thomas Zimmermann. Improving Developer Participation Rates in Surveys. In *Proceedings of the International Workshop on Cooperative and Human Aspects of Software Engineering*, 2013, IEEE

ESE 2012 Chris Parnin, Christian Bird, and Emerson Murphy-Hill. Adoption and Use of Java Generics. *Empirical Software Engineering*, 2012, 1–43

FSE 2012 Christian Bird, and Thomas Zimmermann. Assessing the value of branches with what-if analysis. In *Proceedings of the 20th International Symposium on Foundations of Software Engineering*, 2012, ACM. (17% ACM Distinguished Paper Award)

ICSM 2012 Abram Hindle, Christian Bird, Thomas Zimmermann, and Nachiappan Nagappan. Relating requirements to implementation via topic analysis: Do topics extracted from requirements make sense to managers and developers? In *Proceedings of the 28th IEEE International Conference on Software Maintenance*, 2012, IEEE. (25%)

ESEM 2012 Emad Shihab, Christian Bird, and Thomas Zimmermann. The effect of branching strategies on software quality. In *Proceedings of the Sixth International Symposium on Empirical Software Engineering and Measurement*, 2012, ACM/IEEE. (25%)

MSR 2012 Christian Bird, and Nachiappan Nagappan. Who? where? what? examining distributed development in two large open source projects. In *Proceedings of the International Working Conference on Mining Software Repositories*, 2012, IEEE. (28%)

FASE 2012 Earl T. Barr, Christian Bird, Peter C. Rigby, Abram Hindle, Daniel M. German, and Premkumar Devanbu. Cohesive and Isolated Development with Branches. In *Proceedings of the International Conference on Fundamental Approaches to Software Engineering*, 2012, Springer. (24%)

CSD 2012 Thomas Zimmermann, and Christian Bird. Collaborative Software Development in Ten Years: Diversity, Tools, and Remix Culture. In *Proceedings of the Workshop on The Future of Collaborative Software Development*, 2012

ESE 2012 Foyzur Rahman, Christian Bird, and Premkumar Devanbu. Clones: What **is** that Smell? *Empirical Software Engineering, An International Journal*, 2012

MLT 2011 Tim Menzies, Christian Bird, Tom Zimmermann, Wolfram Schulte, and Ekrem Kocaguneli. The Inductive Software Engineering Manifesto: Principles for Industrial Data Mining. In *Proceedings of the International Workshop on Machine Learning Technologies in Software Engineering*, 2011, ACM

PROMISE 2011 Andreas Zeller, Thomas Zimmermann, and Christian Bird. Failure is a Four Letter Word: A Parody in Empirical Research. In *Proceedings of the 7th International Conference on Predictor Models in Software Engineering*, 2011

ICSM 2011 Qiaona Hong, Sunghun Kim, S. C. Cheung, and Christian Bird. Understanding a Developer Social Network and its Evolution. In *Proceedings of the 27th IEEE International Conference on Software Maintenance*, 2011, IEEE. (28%)

FSE 2011 Christian Bird, Nachiappan Nagappan, Brendan Murphy, Harald Gall, and Premkumar Devanbu. Don't Touch My Code! Examining the Effects of Ownership on Software Quality. In *Proceedings of the the eighth joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on The Foundations of Software Engineering*, 2011, ACM. (17%)

MSR 2011 Chris Parnin, Christian Bird, and Emerson Murphy-Hill. Java Generics Adoption: How New Features are Introduceded, Champion, or Ignored. In *Proceedings of the International Working Conference on Mining Software Repositories*, 2011. (33%, invited to Journal special issue: 10%)

CHASE 2011 Christian Bird, Thomas Zimmermann, and Alex Teterev. A Theory of Branches as Goals and Virtual Teams. In *Proceedings of the International Workshop on Cooperative and Human Aspects of Software Engineering*, 2011

ESE 2010 Daryl Posnett, Christian Bird, and Premkumar Devanbu. An Empirical Study on the Influence of Pattern Roles on Change-Proneness. *Empirical Software Engineering, An International Journal*, 2010, 1–28

FOSE 2010 Earl Barr, Christian Bird, Eric Hyatt, Tim Menzies, and Gregorio Robles. On the Shoulders of Giants. In *FSE/SDP Workshop on the Future of Software Engineering Research*, 2010. (65%)

FSE 2010 Adrian Bachmann, Christian Bird, Foyzur Rahman, Premkumar Devanbu, and Abraham Bernstein. The Missing Links: Bugs and Bug-fix Commits. In *SIGSOFT '10/FSE-18: Proceedings of the 16th ACM SIGSOFT Symposium on Foundations of Software Engineering*, 2010, ACM. (20%)

MSR 2010 Daryl Posnett, Christian Bird, and Premkumar Devanbu. Thex: Mining Metapatterns in Java. In *Proceedings of the Seventh Working Conference on Mining Software Repositories*, 2010, IEEE Computer Society. (31%)

MSR 2010 Roozbeh Nia, Christian Bird, Premkumar Devanbu, and Vladimir Filkov. Validity of network analyses in open source projects. In *Proceedings of the Seventh Working Conference on Mining Software Repositories*, 2010, IEEE Computer Society. (31%)

MSR 2010 Foyzur Rahman, Christian Bird, and Premkumar Devanbu. Clones: What *is* that Smell? In *Proceedings of the Seventh Working Conference on Mining Software Repositories*, 2010, IEEE Computer Society. (31% Best Paper Award 1%)

ISSRE 2009 Christian Bird, Nachiappan Nagappan, Premkumar Devanbu, Harald Gall, and Brendan Murphy. Putting it All Together: Using Socio-Technical Networks to Predict Failures. In *Proceedings of the 17th International Symposium on Software Reliability Engineering*, 2009, IEEE Computer Society. (25%)

FSE 2009 Christian Bird, Adrian Bachmann, Eirik Aune, John Duffy, Abraham Bernstein, Vladimir Filkov, and Premkumar Devanbu. Fair and Balanced? Bias in Bug-Fix Datasets. In *Proceedings of the the Seventh joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on The Foundations of Software Engineering*, 2009, ACM. (14%)

CACM 2009 Christian Bird, Nachiappan Nagappan, Premkumar Devanbu, Harald Gall, and Brendan Murphy. Does Distributed Development Affect Software Quality? An Empirical Case Study of Windows Vista. *Communications of the ACM 52*, 8, August 2009, 85–93. (Revised edition of ICSE paper invited to Research Highlights in CACM)

ICSE 2009 Christian Bird, Nachiappan Nagappan, Premkumar Devanbu, Harald Gall, and Brendan Murphy. Does Distributed Development Affect Software Quality? An Empirical Case Study of Windows Vista. In *Proceedings of the 31st International Conference on Software Engineering*, 2009, IEEE Computer Society, pp. 518–528. (12% Best Paper Award 1%)

MSR 2009 Christian Bird, Peter C. Rigby, Earl T. Barr, David J. Hamilton, Daniel M. German, and Prem Devanbu. The Promises and Perils of Mining Git. In *Proceedings of the Sixth Working Conference on Mining Software Repositories*, 2009, IEEE Computer Society. (28%)

SDM 2009 Christian Bird, Earl Barr, Andre Nash, Premkumar Devanbu, Vladimir Filkov, and Zhendong Su. Structure and Dynamics of Research Collaboration in Computer Science. In *Proceedings of the Ninth SIAM International Conference on Data Mining*, 2009, SIAM, pp. 826–837. (29%)

FSE 2008 Christian Bird, David Pattison, Raissa D'Souza, Vladimir Filkov, and Premkumar Devanbu. Latent Social Structure in Open Source Projects. In *SIGSOFT '08/FSE-16: Proceedings of the 16th ACM SIGSOFT Symposium on Foundations of Software Engineering*, 2008, ACM, pp. 24–35. (20%)

MSR 2008 David Pattison, Christian Bird, and Premkumar Devanbu. Talk and Work: a Preliminary Report. In *Proceedings of the Fifth International Working Conference on Mining Software Repositories*, 2008, ACM, pp. 113–116. (40%)

FSE 2007 Zachary M. Saul, Vladimir Filkov, Premkumar Devanbu, and Christian Bird. Recommending Random Walks. In *ESEC-FSE '07: Proceedings of the the Sixth joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on The Foundations of Software Engineering*, 2007, ACM, pp. 15–24. (17%, nominated for Best Paper)

MSR 2007 Christian Bird, Alex Gourley, and Prem Devanbu. Detecting Patch Submission and Acceptance in OSS Projects. In *Proceedings of the Fourth International Workshop on Mining Software Repositories*, 2007, IEEE Computer Society, pp. 26–35. (38%)

MSR 2007 Christian Bird, Alex Gourley, Prem Devanbu, Anand Swaminathan, and Greta Hsu. Open Borders? Immigration in Open Source Projects. In *Proceedings of the Fourth International Workshop on Mining Software Repositories*, 2007, IEEE Computer Society, p. 6. (38%)

APVIS 2007 Michael Ogawa, Kwan-Liu Ma, Christian Bird, Premkumar T. Devanbu, and Alex Gourley. Visualizing Social Interaction in Open Source Software Projects. In *Sixth International Asia-Pacific Symposium on Visualization*, 2007, pp. 25–32. (45%)

MSR 2006 Christian Bird, Alex Gourley, Prem Devanbu, Michael Gertz, and Anand Swaminathan. Mining Email Social Networks. In *Proceedings of the Third International Workshop on Mining software repositories*, 2006, ACM, pp. 137–143. (35%)

MSR 2006 Christian Bird, Alex Gourley, Prem Devanbu, Michael Gertz, and Anand Swaminathan. Mining Email Social Networks in Postgres. In *Proceedings of the Third International Workshop on Mining software repositories (Challenge Track)*, 2006, ACM, pp. 185–186

Invited Papers, Demo papers, etc.

IEEE Software 2018 P. Devanbu, T. Zimmermann, and C. Bird. Belief and Evidence: How Software Engineers Form Their Opinions. *IEEE Software 35*, 6, November/December 2018, 72–76

ICSM 2011 Christian Bird. Sociotechnical Coordination and Collaboration in Open Source Software. In *Doctoral Symposium, Proceedings of the 27th IEEE International Conference on Software Maintenance*, 2011, IEEE

CSCW 2011 Christian Bird, Brendan Murphy, Nachiappan Nagappan, and Thomas Zimmermann. Empirical Software Engineering at Microsoft Research. In *Showcase Track, Proceedings of the ACM Conference on Computer Supported Cooperative Work*, 2011

ESEM 2010 Foyzur Rahman, Christian Bird, and Premkumar Devanbu. Clones: What *is* that Smell? In *Proceedings of the fourth International Symposium on Empirical Software Engineering and Measurement*, 2010, IEEE Computer Society. (invited paper)

FSE 2010 Christian Bird, Adrian Bachmann, Foyzur Rahman, and Abraham Bernstein. Linkster: Enabling Efficient Manual Mining. In *Demonstration Track, Proceedings of the 17th SIGSOFT Symposium on Foundations of Software Engineering*, 2010, ACM. (accepted for formal demonstration, 21%)

Invited Talks

2020 **Lessons and Insights from Tech Transfers at Microsoft**, *Keynote, The 27th IEEE International Conference on Software Analysis, Evolution and Reengineering*, London, Ontario Canada.

2019 **Lessons and Insights from Tech Transfers at Microsoft**, *Keynote, The 10th Brazilian Conference on Software*, Salvador, Bahia, Brazil.

2019 **Lessons and Insights from Tech Transfers at Microsoft**, *Keynote, The 15th International Conference on Predictive Models and Data Analytics in Software Engineering*, Porto de Galinhas, Brazil.

2014 **Lessons and Insights from Tech Transfers at Microsoft**, *Keynote, 4th Workshop on Mining Unstructured Data (colocated with ICSME 2014)*, Victoria, British Columbia, Canada.

2014 **Empirical Investigations into Code Review at Microsoft and Beyond**, *Carnegie Mellon University*, Pittsburgh, Pennsylvania.

2013 **Investigations into Code Review at Microsoft and Beyond**, *University of Victoria*, Victoria, British Columbia, Canada.

2012 **Branch Analytics at Microsoft**, *University of Victoria*, Victoria, British Columbia, Canada.

2011 **Empirical Software Engineering at Microsoft Research: Transitioning Research into practice**, *Brigham Young University*, Provo, Utah.

2011 **SocioTechnical Effects in Software Teams**, *Hong Kong University of Science and Technology*, Hong Kong.

2010 **SocioTechnical Effects in Software Teams**, *Microsoft Research*, Bangalore, India.

2010 **Does Distributed Development Affect Software Quality?**, *Third India Software Engineering Conference*, Mysore, India.

2010 **Jazz Anthropology**, *T. J. Watson Research Center, IBM*, Hawthorne, New York.

2009 **On the Effect of Ownership in Varying Software Processes**, *Microsoft Research*, Redmond, Washington.

2008 **Latent Social Structure in Open Source Projects**, *INFORMS Annual Meeting*, Washington, D.C...

2008 **Does Distributed Development Affect Software Quality?**, *Microsoft Research*, Redmond, Washington.

2008 **Social Organization in Open Source Software**, *T. J. Watson Research Center, IBM*, Hawthorne, New York, U.S.A..

2006 **Social Network Analysis in Software Teams**, *Guest Lecture, MAE 298, Understanding Networks: Theory and Applications*, University of California, Davis, U.S.A..

Research Experience

2011 - present **Principal Researcher**, *Empirical Software Engineering Group*, Microsoft, Research, Redmond, Washington.

2010 - 2011 **Postdoctoral Researcher**, *Empirical Software Engineering Group*, Microsoft, Research, Redmond, Washington.

2005-2010 **Research Assistant**, *Software Engineering Lab under Prof. Premkumar Devanbu*, University of California, Davis, Davis, California.

2009 **Research Intern**, *Governance Science Research Group under Clay Williams*, T. J. Watson Research Center, IBM, Hawthorne, New York.

2009 **Research Intern**, *Software Engineering Group under Nachiappan Nagappan*, Microsoft Research, Redmond, Washington.

2008 **Research Intern**, *Software Engineering Group under Nachiappan Nagappan*, Microsoft Research, Redmond, Washington.

2004 **Research Assistant**, *Software Engineering Lab under Prof. Raju Pandey*, University of California, Davis, Davis, California.

Teaching Experience

2004 - 2005 **Teaching Assistant**, *Programming Languages under Prof. Ronald Olsson and Prof. Raju Pandey*, University of California, Davis, Davis, California.

1997 **Teaching Assistant**, *Advanced Data Structures under Prof. Theodore Norman*, Brigham Young University, Provo, Utah.

Industry Experience

2000-2005 **Software Engineer**, *Embedded Software Tools Group*, Motorola, Lindon, Utah.

1997 **Technical Support Engineer**, *Technical Support Department*, Caldera Systems Inc., Provo, Utah.

Academic Service

PC Chair

International Conference on Software Analysis, Evolution and Reengineering, Industry Track, 2020

ACM Sigsoft Symposium on Foundations of Software Engineering, Journal First Track (co-chair), 2020

International Symposium on Empirical Software Engineering and Measurement, Industry Track (co-chair), 2018

International Conference on Software Maintenance and Evolution, Industry Track (co-chair), 2018

International Conference on Mining Software Repositories (co-chair), 2016

International Conference on Program Comprehension (co-chair), 2015

International Workshop on Replications in Software Engineering, 2013

International Workshop on Data Analysis Patterns in Software Engineering (DAPSE), 2013

International Workshop on Release Engineering (RelEng), 2013

International Conference on Program Comprehension, Industry Track (co-chair), 2013

Challenge Track of Mining Software Repositories, 2009

Journal Positions

Review Board, IEEE Transactions on Software Engineering, 2017-present

Associate Editor, Journal of Systems and Software, 2017-2018

Academic Editor, PeerJ Computer Science, 2016-present

Editorial Board, Journal of Information and Software Technology, 2016-present

Guest Editor

Journal of Empirical Software Engineering Special Issue for International Conference on Program Comprehension 2015, published in 2017

Journal of Empirical Software Engineering Special Issue for Mining Software Repositories 2016, in progress

IEEE Software Special Issue on Crowdsourcing in Software Engineering, 2017

IEEE Software Special Issue on Release Engineering, 2015

IEEE Software 2nd Special Issue on Release Engineering, 2016

IEEE Software 3rd Special Issue on Release Engineering, 2017

Steering Committee

International Conference on Mining Software Repositories MSR, 2015-present

International Conference on Program Comprehension (ICPC), 2015-2018

Organizing Committee

International Workshop on Data Analysis Patterns in Software Engineering (DAPSE), 2013

International Workshop on Release Engineering (RelEng), 2013, 2014, 2015, 2016

International Workshop on Replications in Software Engineering, 2013

PC Member

International Conference on Software Engineering, 2014, 2016, 2017, 2019, 2020

ACM Sigsoft Symposium on Foundations of Software Engineering, 2012, 2016, 2018

International Symposium on Software Testing and Analysis, 2019

International Conference on Automated Software Engineering, 2014, 2015, 2018, 2020

International Symposium on Empirical Software Engineering and Measurement, 2015, 2017

Indian Software Engineering Conference, 2015, 2016

International Symposium on Software Reliability Engineering, Industrial track, 2013

International Conference on Software Maintenance, 2012, 2013, 2014

International Conference on Program Comprehension, 2012, 2014, 2016, 2018

International Conference on Predictor Models in Software Engineering, 2013

International Conference on Software Engineering Advances, 2013

International Conference on Mining Software Repositories, 2010, 2011, 2012, 2013, 2015, 2017, 2018

International Conference on Global Software Engineering, 2015, 2016

International Conference on Software Enginering and Applications, 2014

International Conference on Software Analysis, Evolution and Reengineering, 2015, 2016, 2017, 2018, 2019, 2020

International Conference on Software Maintenance and Evolution, Early Research Achievements track, 2016

International Symposium on Software Crowdsourcing, 2015, 2016

ACM Student Research Competition (at ICSE), 2012

Formal Research Demonstrations track at ICSE, 2014

ACM Sigsoft Symposium on Foundations of Sofware Engineering, Tool Demonstration Track, 2017

International Conference on Software Analysis, Evolution, and Reengineering, Early Research Achievements track, 2016

International Conference on Software Analysis, Evolution, and Reengineering, Reproducibility and Negative Results track, 2018

International Symposium on Empirical Software Engineering and Measurement, Industrial track, 2011

International Conference on Software Maintenance, Early Achievements track, 2011

European Soft. Eng. Conf./Foundations of Soft. Eng., Artifact Evaluation Committee, 2011

Euromicro Conference on Software Engineering and Advanced Applications Special Session on Estimation and Prediction in Software & Systems Engineering, 2012, 2014

2nd SEMAT Workshop on a General Theory of Software Engineering (GTSE) 2013,

International Workshop on Software Refactoring, 2016

International Workshop on Alternative Workforces for Software Engineering 2015

International Workshop on Regression Testing, 2012, 2013

International Workshop on Machine Learning Technologies in Software Engineering, 2011

International Workshop on Empirical Software Engineering in Practice, 2010, 2011, 2012, 2013

International Workshop on Replications in Empirical Software Engineering Research, 2010, 2011

International Workshop on Emerging Trends in FLOSS Research and Development, 2010

International Workshop on the General Theory of Software Engineering, 2013

Challenge Track of Mining Software Repositories, 2008, 2009

Data Track of Mining Software Repositories, 2014

Reviewer Communications of the ACM

ACM Transactions on Software Engineering and Methodology

IEEE Transactions on Software Engineering

Journal of Empirical Software Engineering

IEEE Software

IEEE Intelligent Systems

Journal of Systems and Software

Journal of Information and Software Technology

Journal of Software: Evolution and Process

Journal of Software Testing, Verification & Reliability
Software Quality Journal
International Symposium on Software Testing and Analysis, 2012
International Conference on Software Engineering, 2008, 2009, 2013
International Conference on Software Engineering (SEIP Track), 2015
ACM Conference on Computer Supported Cooperative Work, 2008, 2012, 2013
International Working Conference on Mining Software Repositories, 2007, 2008, 2009
European Conference on Object Oriented Programming, 2009
Haifa Verification conference, 2011
ACM Conference on Recommender Systems, 2009
Science of Computer Programming, 2011

Other Student Volunteer Chair, Sigsoft Symposium on Foundations of Software Engineering, 2014

Thesis Committees

Adrian Schröter, Ph.D., University of Victoria, 2012
Jordan Ell, M.S., University of Victoria, 2014
Motahareh (Sara) Bahrami Zanjani, Ph.D., Wichita State University, 2017

Memberships

Senior Member, Institute of Electrical and Electronics Engineers (IEEE)
Association for Computing Machinery (ACM)
ACM Special Interest Group on Software Engineering (ACM SIGSOFT)

References

Available upon request