Earl T. Barr

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(+44) 07758239984 earl.barr@gmail.com
www.earlbarr.com

Research Interests

Software engineering, programming languages, computer security, and systems.

Professional Experience

Professor	*University College London, London, UK* • 2012–present
Software Systems Engineering (SSE); Centre for Research on Evolution, Search and Testing (CREST)	
Visiting Assistant Professor	*University of California, Davis, CA* • 2013,2019
Postdoctoral Scholar	*University of California, Davis, CA* • 2010–2012
Mentors: Premkumar Devanbu and Zhendong Su	
I3P Fellow	*University of California, Davis, CA* • 2009
Lecturer (Teaching Fellow in the UK)	*University of California, Davis, CA* • 2003–2006
Software Architect	*MarketAxess, New York, New York* • 2000–2001

Education

Ph.D. Computer Science	*University of California, Davis, CA* • June 2009
Dissertation: The MAGE Programming Model; Advisor: Raju Pandey	

Honors

International Conference on Software Engineering: 2022 Most Influential Paper Award

UCL Student Choice Award Nomination for Inspiring Teaching Delivery 2020

Journal of Systems and Software, Editor of the Year 2019

Mining Software Repositories: 2019 Most Influential Paper Award

Communications of the ACM Research Highlight, 2016

GECCO: Gold Humie 2016, Bronze Humie 2019

Visiting Scholar UC Davis: 2013, 2019

Visiting Researcher Microsoft Research: 2015, 2017

Four Dagstuhls, 2014–5, SE4ML 2020 and Monte Verità Symposium, 2013

Three ACM SIGSOFT Distinguished Papers: ISSTA'13, FSE'14, and ISSTA'15

Microsoft Faculty Summit, 2011

Institute for Information Infrastructure Protection (I3P) Fellow, 1 of 2 awards given annually, 2009–10

Best Paper Award at the IEEE Conference on E-Commerce Technology (CEC), 2005

Invited Presentations

Imperial College London, 2013, 2019.
Monash University, Melbourne, 2018.
Semmle, Oxford, 2018.
Source{d}, Madrid, 2018.
University of Adelaide, Adelaide, 2018.
MLP Workshop, Oxford, 2018.
Microsoft Research, Redmond, 2012,2015,2017.
AIFORSE, Barcelona, 2017.
Université de Rennes, Rennes, 2016.
University of Edinburgh, 2015.
Inter-Disciplinary Workshop on Statistical NLP Methods for Code Corpora, Redmond, 2015.
Indian Conference on Software Engineering (ISEC), 2015.
University of Lille/Inria, 2013 and 2014.
Mining Software Repositories Next Generation, 2014.
CREST Open Workshop: COW'29, COW'30, 2013; COW'55, 2018.
Mysore Workshop on the Future of Debugging, 2012.

Funding

1. Cisco; Lasso: Corralling Implicitly Structured Strings for Security and Testing PI $150, 2020.
2. Cisco; LocksAll: Finding Default Credentials and Backdoors, PI $110, 2019.
3. Hauwei, Gift, £100k, 2018.
4. EPSRC; DAASE: Dynamic Adaptive Automated Software Engineering EP/J017515/1 PI; Partners: Birmingham, Queen Mary, Sheffield, Stirling; £6,834,903; 2017.
5. EPSRC; LUCID: Clearer Software by Integrating Natural Language Analysis into Software EP/P005659/1; PI; Partners: Charles Sutton, University of Edinburgh; £380k; 2016.
6. GCHQ Small Grant Scheme; co-Investigator; PI: David Clark; £35,157; 2014.
7. EPSRC/GCHQ; "SeMaMatch: Semantic Malware Matching" EP/K032623/1; co-Investigator; PI: David Clark; £309k; 2013.
8. NFS Computing and Communication Foundations Grant CCF-1247280; "EAGER: Exploiting the Naturalness of Software"; co-PI; PI: Premkumar Devanbu; co-PI: Zhendong Su; $300k; 2012.
9. DHS I3P Research Fellowship; "Understanding the Malware Arms Race,"; PI; $150k; 2009-2010.
10. NSF, Software and Hardware Foundations (SHF) Medium Grant CCF-0964703; "SHF:Medium:How Do Static Analysis Tools Affect End-user Quality?"; co-PI; PI: P. Devanbu and Z. Su, and co-PI: V. Filkov; $700,118; 2010–2013.
11. AFOSR DURIP; "Helix Project Testbed: Towards the Self-Regenerative Incorruptible Enterprise"; co-PI; PI: John Knight, University of Virginia and co-PIs from University of Virginia, UC Davis, UCSB, and University of New Mexico; $240,000 (UCD portion: $60k), 2010–2011.
12. NFS; Software and Hardware Foundations (SHF) Small Grant CCF-1117603; "SHF:Small:Reusing Debugging Knowledge"; co-PI; PI: Zhendong Su; $499,999; 2010.

Publications

Conference Articles

1. High Assurance Software for Financial Regulation and Business Platforms. S Goldbaum, A Mihaly, T Ellison, ET Barr, M Marron. International Conference on Verification, Model Checking, and Abstract Interpretation, 2022.
2. Type Inference as Optimization. EV Pandi, ET Barr, AD Gordon, C Sutton. Advances in Programming Languages and Neurosymbolic Systems Workshop, 2021.
3. Artefact Relation Graphs for Unit Test Reuse Recommendation. R White, J Krinke, ET Barr, F Sarro, C Ragkhitwetsagul. 14th IEEE Conference on Software Testing, Verification and Validation (ICST) 2021.
4. Flexeme: untangling commits using lexical flows. PP Pârțachi, SK Dash, M Allamanis, ET Barr. Proceedings of the 28th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering, 2020.
5. Ant Colony Optimization for Object-Oriented Unit Test Generation. D Bruce, HD Menéndez, ET Barr, D Clark. International Conference on Swarm Intelligence, 2020.
6. Typilus: Neural Type Hints. Miltiadis Allamanis, Earl T. Barr, Soline Ducousso, Zheng Gao. *PLDI*, 91-105, 2020.

7. A Theory of Dual Channel Constraints. C Casalnuovo, ET Barr, SK Dash, P Devanbu, E Morgan. *ICSE NIER Track*, 2020.

8. Where Should I Comment my Code? A Dataset and Model for Predicting Locations that Need Comments. A Louis, SK Dash, ET Barr, MD Ernst, C Sutton. *ICSE NIER Track*, 2020.

9. POSIT: Simultaneously Tagging Natural and Programming Languages PP Pârțachi, S Dash, C Treude, ET Barr. *ICSE*, 2020.

10. A Survey of Genetic Improvement Search Spaces Justyna Petke, Brad Alexander, Earl T. Barr, AEI Brownlee, Markus Wagner, David R. White. *The Genetic and Evolutionary Computation Conference (GECCO), Companion Material*, 2019.

11. Gin: Genetic Improvement Research Made Easy. AEI Brownlee, Justyna Petke, Brad Alexander, Earl T. Barr, Markus Wagner, David R. White. *The Genetic and Evolutionary Computation Conference (GECCO)*, 2019.

12. RefiNym: Using Names to Refine Types. Santanu K. Dash, Miltiadis Allamanis, Earl T. Barr. *Proceedings of the 26th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)*, 2018.

13. Deep Learning Type Inference. Vincent J. Hellendoorn, Christian Bird, Earl T. Barr, Miltiadis Allamanis. *Proceedings of the 26th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)*, 2018.

14. Darwinian Data Structure Selection. Michail Basios, Lingbo Li, Fan Wu, Leslie Kanthan, Earl T Barr. *Proceedings of the 26th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)*, 2018.

15. Making Data-driven Porting Decisions with Tuscan. Kareem Khazem, Earl T. Barr, and Petr Hosek. *Proceedings of the 27th ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA)*, Amsterdam, Netherlands, 2018.

16. Optimising Darwinian Data Structures on Google Guava Michail Basios, Lingbo Li, Fan Wu, Leslie Kanthan, Earl T. Barr. *Proceedings of the International Symposium on Search Based Software Engineering*, 2017.

17. To Type or not to Type: Quantifying Detectable Bugs in JavaScript. Zheng Gao, Christian Bird, Earl T. Barr. *Proceedings of the 39th International Conference on Software Engineering (ISCE)*, Beunos Ares, Argentina, 2017.

18. Time-travel debugging for JavaScript/Node.js. Earl T. Barr, M Marron, E Maurer, D Moseley, G Seth. *Proceedings of the 10th Joint Meeting of the European Software Engineering Conference and ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE) (demo track)*, Seattle, Washington, USA, Italy, 2016.

19. Automated Transplantation of Call Graph and Layout Features into Kate. Alexandru Marginean, Earl T. Barr, Mark Harman, and Yue Jia. *Proceedings of the International Conference on Search-Based Software Engineering*, Bergamo, Italy, 2015.

20. Is the Cure Worse than the Disease? Overfitting in Automated Program Repair. EK Smith, Earl T. Barr, C Le Goues, Y Brun. *Proceedings of the 10th Joint Meeting of the European Software Engineering Conference and ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE)*, Bergamo, Italy, 2015. (25%)

21. Suggesting Accurate Method and Class Names. Miltiadis Allamanis, Earl T. Barr, Christian Bird, and Charles Sutton. *Proceedings of the 10th Joint Meeting of the European Software Engineering Conference and ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE)*, Bergamo, Italy, 2015. (25%)

22. Automated Software Transplantation. Earl T. Barr, Yue Jia, Mark Harman, Alexandru Marginean, Justyna Petke, *Proceedings of the International Symposium on Software Testing and Analysis (ISSTA'15)*, Baltimore, USA, 2015. (28%) **ACM SIGSOFT Distinguished Paper Award**

23. Learning Natural Coding Conventions. Miltiadis Allamanis, Earl T. Barr, Christian Bird, and Charles Sutton. *Proceedings of the 22nd International Symposium on the Foundations of Software Engineering (FSE'14)*, Hong Kong, China, 2014. (22%). **ACM SIGSOFT Distinguished Paper Award; Artifact recognition.**

24. The Plastic Surgery Hypothesis. Earl T. Barr, Yuriy Brun, Prem Devanbu, Mark Harman, and Federica Sarro. *Proceedings of the 22nd International Symposium on the Foundations of Software Engineering (FSE'14)*, Hong Kong, China, 2014. (22%)

25. TARDIS: Affordable Time-Travel Debugging in Managed Runtimes. Earl T. Barr and Mark Marron. *Proceedings of the 2014 ACM International Conference on Object-Oriented Programming Systems*, Languages, and Applications (OOPSLA/SPLASH!'14), Portland, Oregon, USA, 2014. (28%)

26. Capturing and Exploiting IDE Interactions. Zhongxian Gu, Drew Schleck, Earl T. Barr, and Zhendong Su. *Proceedings of the 2014 ACM International Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA/ONWARD!'14)*, Portland, Oregon, USA, 2014. (47%)

27. Uncertainty, Risk, and Information Value in Software Requirements and Architecture. Emmanuel Letier, David Stefan, and Earl T. Barr. *Proceedings of the International Conference on Software Engineering (ICSE'14)*, Hyderabad, India, 2014. (20%)

28. Comparing Static Bug Finders and Statistical Prediction. Foyzur Rahman, Sameer Khatri, Earl T. Barr, and Prem Devanbu. *Proceedings of the International Conference on Software Engineering (ICSE'14)*, Hyderabad, India, 2014. (20%)

29. Collecting a Heap of Shapes. Earl T. Barr, Christian Bird, and Mark Marron. *Proceedings of the International Symposium on Software Testing and Analysis (ISSTA'13)*, Lugano, Switzerland, 2013. (26%) **ACM SIGSOFT Distinguished Paper Award**

30. What Effect Does Distributed Version Control Have on OSS Project Organization? Peter C. Rigby, Earl T. Barr, Christian Bird, Premkumar Devanbu, and Daniel M. German. *Proceedings of the 1st International Workshop on Release Engineering*, San Francisco, CA, USA, May 20, 2013.

31. Automatic Detection of Floating-Point Exceptions. Earl T. Barr, Thanh Vo, Vo Le and Zhendong Su. *Proceedings of the Principles of Programming Languages (POPL'13)*, Rome, Italy, 2013. (18%)

32. Liberating the Programmer with Prorogued Programming. Mehrdad Afshari, Earl T. Barr, and Zhendong Su. *Proceedings of the ACM International Symposium on new ideas, new paradigms, and reflections on programming and software (Onward!)*, Tucson, Arizona, USA, 2012. (26%)

33. Reusing Debugging Knowledge via Trace-based Bug Search. Zhongxian Gu, Earl T. Barr, Drew Schleck, and Zhendong Su. *Proceedings of the 3rd Systems, Programming, Languages, and Applications: Software for Humanity (OOPSLA/SPLASH'12)*, Tucson, Arizona, USA, 2012. (25%)

34. On the "Naturalness" of Software. Abram Hindle, Earl T. Barr, Zhendong Su, Premkumar Devanbu, and Mark Gabel. *Proceedings of the 2012 International Conference on Software Engineering (ICSE'12)*, Zürich, Switzerland, 2012. (21%)

35. Cohesive and Isolated Development with Branches. Earl T. Barr, Christian Bird, Peter C. Rigby, Abram Hindle, Daniel M. German, and Premkumar Devanbu. *Proceedings of the 15th International Conference on Fundamental Approaches to Software Engineering (FASE'12)*, Tallinn, Estonia, 2012. (25%)

36. BugCache for inspections : Hit or miss?. Foyzur Rahman, Daryl Posnett, Abram Hindle, Earl T. Barr, Premkumar Devanbu. *Proceedings of the 19th ACM SIGSOFT Symposium on Foundations of Software Engineering*, 2011.

37. BQL: Capturing and Resuing Debugging Knowledge . Zhongxian Gu, Earl T. Barr, and Zhendong Su. *Proceedings 33rd International Conference on Software Engineering — Demonstrations Track*, Waikiki, Honolulu, Hawaii, 2011. (37%)

38. On the Shoulders of Giants. Earl T. Barr and Christian Bird and Eric Hyatt and Tim Menzies and Gregorio Robles. *Proceedings 2010 FSE/SDP Workshop on the Future of Software Engineering Research*, Santa Fe, New Mexico, 2010.

39. Perturbing Numerical Calculations for Statistical Analysis of Floating-Point Program (In)Stability. Enyi Tang, Earl T. Barr, Xuandong Li, and Zhendong Su. *Proceedings of the International Conference on Software Testing and Analysis (ISSTA'10)*, Trento, Italy, 2010. (23%)

40. Has the Bug Really Been Fixed? Zhongxian Gu, Earl T. Barr, David J. Hamilton, and Zhendong Su. *Proceedings of the 2010 International Conference on Software Engineering (ICSE'10)*, Cape Town, South Africa, 2010. (14%)

41. Trust is in the Eye of the Beholder. Dimitri DeFigueiredo, Earl T. Barr, and S. Felix Wu. *Proceedings of the 2009 International Conference on Information Privacy, Security, Risk and Trust (PASSAT'09)*, Vancouver, Canada, 2009. (14%)

42. The Promises and Perils of Mining Git. Christian Bird, Peter C. Rigby, Earl T. Barr, David J. Hamilton, Daniel M. German, and Prem Devanbu. *Proceedings of the Sixth Working Conference on Mining Software Repositories (MSR 09)*, Vancouver, Canada, 2009. (28%) **MSR 2019 Most Influential Paper Award**

43. Structure and Dynamics of Research Collaboration in Computer Science. Christian Bird, Earl T. Barr, Andre Nash, Vladimir Filkov, Prem Devanbu, and Zhendong Su. *Proceedings of the 2009 SIAM International Conference on Data Mining. (SDM 2009)*, Sparks, NV, April–May 2009. (30%)

44. ConceptDoppler: A Weather Tracker for Internet Censorship. Jedidiah R. Crandall, Daniel Zinn, Michael Byrd, Earl T. Barr, and Rich East. *Proceedings of the 14th ACM Conference on Computer and Communications Security (CCS'07)*, October 2007. (18%)

45. TrustDavis: A Non-Exploitable Online Reputation System. Dimitri do B. DeFigueiredo and Earl T. Barr. *Proceedings of the 7th International IEEE Conference on E-Commerce Technology (CEC)*. Munich, Germany, July 2005. (21%) **Best Paper Award.**

46. Handling Catastrophic Failures in Internet Applications. Michael Haungs, Earl T. Barr, and Raju Pandey. *Proceedings of the International Symposium on Applications and the Internet (SAINT 2004)*, Tokyo, Japan, January 2004. (28%)

47. A Fast Connection-Time Redirection Mechanism for Internet Application Scalability. Michael Haungs, Raju Pandey, Earl T. Barr, and J. Fritz Barnes. *Proceedings of the Ninth International Conference on High Performance Computing (HiPC)*, Bangalore, India, December 2002. (39%)

48. MAGE: A Distributed Programming Model. Earl T. Barr, Raju Pandey and Michael Haungs. *Proceedings of the 21th International Conference on Distributed Computing Systems (ICDCS)*, Phoenix, Arizona, April 2001. (32%)

49. Runtime Support for Type-safe Dynamic Java Classes. Scott Malabarba, Raju Pandey, Jeff Gragg, Earl T. Barr, and J. Fritz Barnes. *Proceedings of the European Conference on Object-Oriented Programming (ECOOP)*, Sophia Antipolis and Cannes, France, June 2000 (20%)

Journal Articles

1. Trident: Controlling Side Effects in Automated Program Repair. N Parasaram, ET Barr, S Mechtaev. IEEE Transactions on Software Engineering, 2021.

2. Getting ahead of the Arms Race: Hothousing the Coevolution of VirusTotal with a Packer. HD Menéndez, D Clark, ET Barr. Entropy 23 (4), 2021.

3. Detecting Malware with Information Complexity. Nadia Alshahwan, Earl T. Barr, David Clark, George Danezis, Héctor D. Menéndez. *Entropy* 22(5): 575, 2020.

4. Game-Theoretic Analysis of Development Practices: Challenges and Opportunities. Carlos Gavidia-Calderon, Federica Sarro, Mark Harman, Earl T. Barr. *Journal of Systems and Software*, 2020.

5. The Arms Race: Adversarial Search Defeats Entropy Used to Detect Malware. Hector D. Menéndez, S Bhattacharya, David Clark, Earl T. Barr. *Expert Systems with Applications* 118, 246-260, 2019.

6. The Assessor's Dilemma: Improving Bug Repair via Empirical Game Theory. Carlos Gavidia-Calderon, Federica Sarro, Mark Harman, Earl T. Barr. *IEEE Transactions on Software Engineering*, 2019.

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

8. A Survey of Machine Learning for Big Code and Naturalness. Miltiadis Allamanis, Earl T. Barr, Premkumar Devanbu, Charles Sutton. *ACM Computing Surveys (CSUR) 51 (4), 81*, 2018.

9. Approximate Oracles and Synergy in Software Energy Search Spaces. Bobby Bruce, Justyna Petke, Mark Harman, and Earl T. Barr. *IEEE Transactions on Software Engineering*, 2018.

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

11. Understanding the Syntactic Rule Usage in Java. D Qiu, B Li, Earl T. Barr, Z Su. *Journal of Systems and Software 123*, 2017.

12. Casper: Automatic Tracking of Null Dereferences to Inception with Causality Traces. B Cornu, Earl T. Barr, L Seinturier, M Monperrus. *Journal of Systems and Software 122*, 2016.

13. On the Naturalness of Software. A Hindle, Earl T. Barr, M Gabel, Z Su, P Devanbu. *Communications of the ACM 59 (5)*, May 2016. **Research Highlight.**

14. The Oracle Problem in Software Testing: A Survey. Earl T. Barr, Mark Harman, Phil McMinn, Shahbaz Muzammil, and Shin Yoo. *IEEE Transactions on Software Engineering*, 41(5), 507–525, 2015.

15. Fixing the 2006 Federal Voting Standards. Earl T. Barr, Matt Bishop, and Mark Gondree. *Communications of the ACM* 50(3) pp. 19-24, March 2007.

Other Research Output

1. Modelling Genetic Programming as a Simple Sampling Algorithm. DR White, B Fowler, W Banzhaf, ET Barr. *Genetic Programming Theory and Practice XVII*, 367-381, 2020.

2. The Naturalness of Software. Earl T. Barr and P. Devanbu. In "Perspectives on Data Science for Software Engineering", edited by Tim Menzies, Laurie Williams, and Thomas Zimmermann". 2016. Morgan Kaufmann, 978-0-12-804206-9.

3. Learning Python Code Suggestion with a Sparse Pointer Network. Avishkar Bhoopchand, Tim Rocktäschel, Earl T. Barr, Sebastian Riedel. arXiv preprint arXiv:1611.08307, 2016.

4. MAGE: A Distributed Programming Model. Earl T. Barr. Doctoral Dissertation, University of California, Davis, Spring 2009.

Advising, University College London

Postdoctoral Researchers

- Zheng Gao
- David Kelly

Former Postdoctoral Researchers

- Santanu Dash, Lecturer at the University of Surrey
- David Landsberg
- Nassim Seghir
- David White, RA
- Jie Zhang, RA

PhD Students

First

- Jenschwich Charoenchai, first with Steve Hailes, 2021–.
- Maria Del Mar Zamorano Lopez, co-first with Federica Sarro, 2021–.
- Iason Papapanagiotakis-Bousy, co-first with David Clark, 2017–.

Second

- Abdoul Kader Kabore, Tegawendé F. Bissyandé (LU) first, 2020–.
- Nikhil Parasaram, Sergey Mechtaev first, 2019–.
- Alexandru Brisan, Don Sannella (UoE) first, 2019–.
- Bruno Mauricio Rodrigues Crotman, Marcio Barros (PPGI-UNIRIO) first, 2019–.
- Irene Vlassi-Pandi, with Andy Gordon (Microsoft Research/UoE) first and Charles Sutton (Google Brain) co-second, 2017–.
- Daniel Bruce, David Clark first, 2017–.

Graduates

- David Kelly, co-first with David Clark, 2017–22.
- Robert White, Jens Krinke first, 2017–22.
- Profir-Petru Pârțachi, David Clark second, 2017–20.
- Carlos Gavidia, co-first with Mark Harman, 2015–20.
- Michail Basios, 2017–9.
- Alexandru Marginean, co-first with Mark Harman, 2014–21.
- Zheng Gao, first, Mark Harman second, 2014–22.
- Oni Olawole, second, Emmanuel Letier first, 2015–20.
- Saheed Busari, second, Emmanuel Letier first, 2014–8.
- Robert Bruce, second, Justyna Petke first, 2014–8.
- Nigel Harold, second, Mark Harman first, 2012–4.

Advising, University of California, Davis

I second-supervised, with Zhendong Su first, the following students:

- Mehrdad Afshari (PhD), 2010–2012
- Andreas Sæbørjensen (PhD), 2010–2014
- Zhongxian Gu (PhD), 2009–2012
- Martin Velez (BA) 2010–2012
- Enyi Tang (PhD), 2009–2010
- Thanh Vo (Masters), 2010–2011
- Jonathan Hollenbeck, Scotty Waggoner (BS) 2011
- Tim Xiao, Steven Hillman (BS) 2009–2010

Teaching

University College London Research Seminar in Software Engineering, 2013–7; Master Projection Supervision (InfoSec and SSE), 2013–21; Compilers, 2013–21; Validation and Verification, 2013–21; and Malware 2015–21.

University California Davis Discrete Mathematics for Computer Science (ECS 20), Summer05; Introduction to Programming and Problem Solving (ECS 30), F06; Computer Organization and Machine-Dependent Programming (ECS 50): F03, S03, F04, S04, S05, W06, S06; Data Structures and Programming (ECS 60): Summer03, Summer04; Introduction to the Theory of Computation (ECS 120): W06; Introduction to Software Engineering (ECS 160): W04, S06; and Ethics in an Age of Technology (ECS 188), F04, F05, W05, S05, W06, S06.

Patents

Mark Marron and Earl T. Barr. Time travel debugging in managed runtime. US Patent 9,875,173. 2018.
Earl T. Barr, Christian Bird, Miltiadis Allamanis, and Mark Marron. Techniques to Identify Idiomatic Code in a Code Base. US Patent 10,042,740. 2018.

Professional Activities

Program Chair

- PC co-chair, with Lin Tan, of ESEC/FSE's Visions and Reflections track, 2020.
- PC ISSTA Doctoral Symposium, 2016.

Program Committees

2022 CAIN, ESEC/FSE, MAPS, MSR, NIER

2021 MSR, ICSE, ISSTA, MSR Registered Reports, ASE

2020 ICSE NIER

2019 ICSE Demo, ISSTA, ESEC/FSE, ICPC, MaLTeSQuE, Onward!

2018 ASE, ECOOP, MASES, ISSTA

2017 ICSE Demonstrations, ICSE NIER, ICSE Workshops, SBST, MSR, NL4SE, SSBSE Challenge Track, ESEC/FSE Doctoral Symposium, ESEC/FSE Tool Demonstrations

2016 ICSE, ESEC/FSE, FM, NL+SE, SBST

2015 ASE, ESEC/FSE, ISSTA, ICSE, ICSE Workshops, ISEC, SBST, Onward!, TASE, ML4PL

2014 DAPSE, ISSTA, HVC, TASE, SCAM, SBST, ICSE SRC, ECADA, CSMR/WCRE

2013 SCORE, ICSE SRC, ICPC, ASE, OOPSLA

Journals

Editor

- Senior Associate Editor, Journal of Systems and Software

Reviewing

- ACM Transactions on Software Engineering and Methodology (TOSEM)
- IEEE Transactions on Software Engineering (TSE)
- Empirical Software Engineering (EMSE)
- IEEE Software
- Software System Modeling
- Journal of Systems and Software
- Knowledge-based Systems
- Journal of Software: Practice and Experience
- Transactions on Dependable and Secure Computing

Examination

- Qualifying exam committee member (internal examiner) for Vu Le and Andreas Sæbjørnsen, UC Davis, 2011.
- Internal Examiner for Fokion Zervoudakis, UCL, 2014.
- External Examiner for Benoit Cornu, Université de Lille, 2015.
- External Examiner for Andrea Mattavelli, University of Lugano, 2016.
- External Examiner for Pantazis Deligiannis, Imperial, 2017.
- External Examiner for Erik Krogh Kristensen, University of Aarhus, 2019.
- External Examiner for Rahul Gupta, Indian Institute of Science, Bangalore, 2019.
- External Examiner for Blake Loring, Royal Holloway, University of London, 2020.
- External Examiner for Alexandru Burdusel, Kings College London, 2020.

Proposal Reviewing

- European Research Council (ERC) 2019
- US National Science Foundation (NSF) 2019

- Engineering and Physical Sciences Research Council (EPSRC) 2013
- United States Army Research Office (ARO) 2010