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Summary of Accomplishments:

- *The most active and impactful early career software engineering scholar in North America according to an independent bibliometric analysis (*https://doi.org/10.1016/j.jss.2021.111029*).*
- *Recipient of selective national and provincial awards, such as the Vanier Canada Graduate Scholarship, the Governor General's Academic Gold Medal, and the Ontario Early Researcher Award.*
- *Five trainees now tenured or on tenure-track at universities in Canada, Japan, Australia, and New Zealand.*

1 Recognitions

1.1 International Research Community

- **ACM SIGSOFT Distinguished Paper Nominee** Int'l Conf. on Software Engineering (ICSE 2022). *One of 19 papers of the 197 accepted papers to receive this recognition.*
- **Distinguished Program Committee Member Award** Int'l Conf. on Software Analysis, Evolution, and Reengineering (SANER 2019).
- **Distinguished Reviewer Award** Int'l Conf. on Software Maintenance & Evolution (ICSME 2018).
- **ACM SIGSOFT Distinguished Paper Award** Int'l Conf. on Mining Software Repositories (MSR 2016). *One of two papers of the 36 accepted papers to receive this award.*
- **Best Paper Nominee** Int'l Conf. on Software Analysis, Evolution and Reengineering (SANER 2016). *One of five papers of the 52 accepted papers to receive this recognition.*
- **Best Paper Nominee** Int'l Conf. on Software Maint. and Evolution (ICSME 2014). *One of five papers of the 40 accepted papers to receive this recognition.*
- **Distinguished Paper Award** Int'l Conf. on Mining Software Repositories (MSR 2014). *One of two papers of the 29 accepted papers to be recognized with this award.*
- **Distinguished Paper Nominee** Int'l Conf. on Mining Software Repositories (MSR 2014). *One of five papers of the 29 accepted papers to receive this recognition.*
- **Best Paper Nominee** Int'l Conf. on Mining Software Repositories (MSR 2014). *One of five papers of the 29 accepted papers to receive this recognition.*
- **Best Paper Nominee** Int'l Conf. on Mining Software Repositories (MSR 2010). *One of five papers of the 16 accepted papers to receive this recognition.*

1.2 National

- **Tier 2 Canada Research Chair in Software Build Automation**. Natural Science and Engineering Research Council of Canada. $600,000 CAD.
- **Governor General's Academic Gold Medal**. The office of the Governor General. *One of two Ph.D. graduates from the Queen's University class of 2015 to be recognized with this award.*
- **Vanier Canada Graduate Scholarship**. Tri-Council Research Agency of Canada. $150,000 CAD. *One of five Ph.D. students at Queen's University to receive this scholarship in 2012.*

1.3 Provincial

- **Ontario Early Researcher Award**. Ministry of Colleges and Universities. $190,000 CAD. *One of eight recipients at the University of Waterloo in the 2022 competition.*
- **Établissement de Nouveaux Chercheurs Universitaires**. Fonds de Recherche du Québec – Nature et Technologie (FRQNT). $50,800 CAD.

1.4 Institutional

- **Ross & Muriel Cheriton Faculty Fellowship**. Cheriton School of Computer Science, University of Waterloo. May 2023–April 2026.
- **Peter Silvester Award**. Dept. of Electrical and Computer Engineering, McGill University. $2K CAD. May 2016.

2 Research Funding History

Program	Role	Total Funding	Share	Start Date	End Date
NSERC Alliance	PI	$338,000	$338,000	Apr. 2023	Mar. 2027
NSERC Alliance Int'l	PI	$40,680	$40,680	Apr. 2023	Mar. 2025
CFI John R. Evans Leaders Fund	PI	$250,000	$125,000	Oct. 2022	Sep. 2027
NSERC Discovery	PI	$240,000	$240,000	May 2022	Apr. 2027
Ontario Early Researcher Award	PI	$190,000	$190,000	Apr. 2022	Mar. 2027
Mitacs Accelerate	PI	$30,000	$30,000	Jan. 2022	Jun. 2022
Contract Funding (YourBase, Inc.)	PI	$197,167	$197,167	May 2021	Apr. 2022
Contract Funding (Huawei Canada)	PI	$349,538	$349,538	Jan. 2021	Dec. 2022
Waterloo-Huawei Joint Innovation Lab	PI	$360,000	$180,000	Jan. 2021	Dec. 2023
Canada Research Chairs (Tier 2)*	PI	$600,000	$225,000	Oct. 2019	Sep. 2024
Mitacs Accelerate	PI	$30,000	$30,000	Jun. 2019	Feb. 2020
NSERC Engage	PI	$25,000	$25,000	Jan. 2019	Jun. 2019
Mitacs Accelerate	PI	$15,000	$15,000	Sep. 2017	Dec. 2017
FRQNT Nouveaux Chercheurs	PI	$50,800	$50,800	May. 2017	Apr. 2019
NSERC Discovery	PI	$186,000	$186,000	May. 2016	Apr. 2022
Total		$2,542,185	$2,222,185		

* Vacated in June 2020 in order to take up the position at University of Waterloo.

3 Publications

3.1 International Journal Articles (28 total)

Shorthand	Journal	Publisher	CORE	Impact Factor	#
TSE	Transactions on Software Engineering	IEEE	A*	5.483	14
EMSE	Empirical Software Engineering	Springer	A	3.126	12
AUSE	Automated Software Engineering	Springer	A	1.590	1
IEEESW	Software	IEEE	B	3.410	1

EMSE'23 M. Meidani*, M. Lamothe*, S. McIntosh. Assessing the Exposure of Software Changes: The DiPiDi Approach. *Empirical Software Engineering* (Springer), 28(41):1–36, Feb. 2023.

TSE'22a T. Xiao, D. Wang, S. McIntosh, H. Hata, R. G. Kula, T. Ishio, K. Matsumoto. Characterizing and Mitigating Self-Admitted Technical Debt in Build Systems. *Transactions on Software Engingeering* (IEEE), 48(10):4214–4228, Oct. 2022.

TSE'22b C. Rezk*, Y. Kamei, S. McIntosh. The Ghost Commit Problem When Identifying Fix-Inducing Changes. *Transactions on Software Engingeering* (IEEE), 48(9):3297–3309, Sep. 2022.

TSE'22c F. Khan*, B. Chen, D. Varró, S. McIntosh. An Empirical Study of Type-Related Defects in Python Projects. *Transactions on Software Engingeering* (IEEE), 48(8):3145–3158, Aug. 2022.

TSE'22d K. Gallaba*, J. Ewart, Y. Junqueira, S. McIntosh. Accelerating Continuous Integration by Caching Environments and Inferring Dependencies. *Transactions on Software Engingeering* (IEEE), 48(6):2040–2052, Jun. 2022.

TSE'22e S. Vysali*, S. McIntosh, B. Adams. Quantifying, Characterizing, and Mitigating Flakily Covered Program Elements. *Transactions on Software Engingeering* (IEEE), 48(3):1018–1029, Mar. 2022.

TSE'22f T. Hirao*, S. McIntosh, A. Ihara, K. Matsumoto. Code Reviews with Divergent Review Scores: An Empirical Study of the OpenStack and Qt Communities. *Transactions on Software Engingeering* (IEEE), 48(1):69–81, Jan. 2022.

EMSE'21a B. Chinthanet, R. G. Kula, S. McIntosh, T. Ishio, A. Ihara, K. Matsumoto. Lags in the Release, Adoption, and Propagation of npm Vulnerability Fixes. *Empirical Software Engineering* (Springer), 26(47):1–28, Mar. 2021.

EMSE'21b C. Macho*, S. Beyer, S. McIntosh, M. Pinzger. The Nature of Build Changes. *Empirical Software Engineering* (Springer), 26(32):1–53, Mar. 2021.

IEEESW'20 F. El Zanaty*, C. Rezk*, S. Lijbrink, W. Van Bergen, M. Côté, S. McIntosh. Automatic Recovery of Missing Issue Type Labels. *Software* (IEEE), 38(3):35–42, May 2021.

TSE'20 K. Gallaba*, S. McIntosh. Use and Misuse of Continuous Integration Features: An Empirical Study of Projects that (mis)use Travis CI. *Transactions on Software Engingeering* (IEEE), 46(1):33–50, Jan. 2020.

TSE'19 C. Tantithamthavorn*, S. McIntosh, A. E. Hassan, K. Matsumoto. The Impact of Automated Parameter Optimization on Defect Prediction Models. *Transactions on Software Engingeering* (IEEE), 45(7):683–711, Jul. 2019.

TSE'18 S. McIntosh, Y. Kamei. Are Fix-Inducing Changes a Moving Target? A Longitudinal Case Study of Just-In-Time Defect Prediction. *Transactions on Software Engingeering* (IEEE), 44(5):412–428, May 2018.

EMSE'18a D. A. da Costa*, S. McIntosh, C. Treude, U. Kulesza, A. E. Hassan. The Impact of Rapid Release Cycles on the Integration Delay of Fixed Issues. *Empirical Software Engineering* (Springer), 23(2):835–904, Apr. 2018.

EMSE'18b D. A. da Costa*, S. McIntosh, U. Kulesza, A. E. Hassan, S. L. Abebe. An Empirical Study of the Integration Time of Fixed Issues. *Empirical Software Engineering* (Springer), 23(1):334–383, Feb. 2018.

EMSE'17a C. Bezemer, S. McIntosh, B. Adams, D. M. Germán, A. E. Hassan. An Empirical Study of Unspecified Dependencies in Make-Based Build Systems. *Empirical Software Engineering* (Springer), 22(6):3117–3148, Dec. 2017.

TSE'17a D. A. da Costa*, S. McIntosh, W. Shang, U. Kulesza, R. Coelho, A. E. Hassan. A Framework for Evaluating the Results of the SZZ Approach for Identifying Bug-Introducing Changes. *Transactions on Software Engingeering* (IEEE), 43(7):641–657, Jul. 2017.

TSE'17b F. Zhang, A. E. Hassan, S. McIntosh, Ying Zou. The Use of Summation to Aggregate Software Metrics Hinders the Performance of Defect Prediction. *Transactions on Software Engingeering* (IEEE), 43(5):476–491, May 2017.

EMSE'17b P. Thongtanunam*, S. McIntosh, A. E. Hassan, H. Iida. Review Participation in Modern Code Review. *Empirical Software Engineering* (Springer), 22(2):768–817, Apr. 2017.

TSE'17c C. Tantithamthavorn*, S. McIntosh, A. E. Hassan, K. Matsumoto. An Empirical Comparison of Model Validation Techniques for Defect Prediction Models. *Transactions on Software Engingeering* (IEEE), 41(1):1–18, Jan. 2017.

AUSE'16 S. McIntosh, B. Adams, M. Nagappan, A. E. Hassan. Identifying and Understanding Header File Hotspots in C/C++ Build Processes. *Automated Software Engineering* (Springer), 23(4):619–647, Dec. 2016.

TSE'16 C. Tantithamthavorn*, S. McIntosh, A. E. Hassan, K. Matsumoto. Comments on "Researcher Bias: The Use of Machine Learning in Defect Prediction" *Transactions on Software Engingeering* (IEEE), 42(11):1092–1094, Nov. 2016.

EMSE'16a Y. Kamei, T. Fukushima, S. McIntosh, K. Yamashita, N. Ubayashi, A. E. Hassan. Studying Just-In-Time Defect Prediction using Cross-Project Models. *Empirical Software Engineering* (Springer), 21(5):2072–2106, Oct. 2016.

EMSE'16b S. McIntosh, Y. Kamei, B. Adams, A. E. Hassan. An Empirical Study of the Impact of Modern Code Review Practices on Software Quality. *Empirical Software Engineering* (Springer), 21(5):2146–2189, Oct. 2016.

EMSE'15 S. McIntosh, M. Nagappan, B. Adams, A. Mockus, A. E. Hassan. A Large-Scale Empirical Study of the Relationship between Build Technology and Build Maintenance. *Empirical Software Engineering* (Springer), 20(6):1587–1633, Dec. 2015.

EMSE'12 S. McIntosh, B. Adams, A. E. Hassan. The evolution of Java build systems. *Empirical Software Engineering* (Springer), 17(5):578–608, Aug. 2012.

Articles In Press

EMSE'?? W. Zhu, S. Proksch, D. M. German, M. W. Godfrey, L. Li, S. McIntosh. What is an App Store? The Software Engineering Perspective. *Empirical Software Engineering* (Springer), To appear(In press):1–40, Accepted in Jun. 2023.

TSE'?? F. Khan*, I. David, D. Varró, S. McIntosh. Code Cloning in Smart Contracts on the Ethereum Platform. *Transactions on Software Engingeering* (IEEE), To appear(In press):1–13, Accepted in Sep. 2022.

3.2 Full-Length Articles (10 pages or more) in International Conference Proceedings (41 Total)

Shorthand	Conference	Publisher	CORE	#
ICSE	Int'l Conf. on Software Engineering	ACM/IEEE	A*	10
FSE	Int'l Sym. on the Foundations of Software Engineering	ACM	A*	2
ASE	Int'l Conf. on Automated Software Engineering	ACM/IEEE	A*	4
ICSME	Int'l Conf. on Software Maintenance and Evolution	IEEE	A	6
MSR	Int'l Conf. on Mining Software Repositories	ACM/IEEE	A	8
ESEM	Int'l Symp. on Empirical Software Engineering and Measurement	ACM	A	2
SANER	Int'l Conf. on Software Analysis, Evolution, and Reengineering	IEEE	A	8
APSEC	Asia-Pacific Software Engineering Conf.	IEEE	B	1

ASE'23 R. Maipradit*, D. Wang, P. Thongtanunam*, R. G. Kula, Y. Kamei, S. McIntosh. Repeated Builds During Code Review: An Empirical Study of the OpenStack Community. *In Proc. of the Int'l Conf. on Automated Software Engineering* (ACM/IEEE), pp. 1–13 (To appear), Sep. 2023. Acceptance Rate: 134/629 (21%).

ICSE'23 M. Nejati*, M. Alfadel*, S. McIntosh. Code Review of Build System Specifications: Prevalence, Purposes, Patterns, and Perceptions. *In Proc. of the Int'l Conf. on Software Engineering* (ACM/IEEE), pp. 1213–1224, May 2023. Acceptance Rate: 209/796 (26%).

ICSME'22 F. Kazemi*, M. Lamothe*, S. McIntosh. Exploring the Notion of Risk in Code Review Recommendation. *In Proc. of the Int'l Conf. on Software Maintenance and Evolution* (ACM/IEEE), pp. 139–150, Oct. 2022. Acceptance Rate: 32/136 (23%).

ICSE'22 K. Gallaba*, M. Lamothe*, S. McIntosh. Lessons from Eight Years of Operational Data from a Continuous Integration Service: An Exploratory Case Study of CircleCI. *In Proc. of the Int'l Conf. on Software Engineering* (ACM/IEEE), pp. 1330–1342, May 2022. Acceptance Rate: 197/751 (26%).
🏆 *ACM SIGSOFT distinguished paper nominee* 🏆

ICSE'22 SEIP R. Wen*, M. Lamothe*, S. McIntosh. How Does Code Reviewing Feedback Evolve? *In Proc. of the Int'l Conf. on Software Engineering, Software Engineering in Practice track* (ACM/IEEE), pp. 151–160, May 2022. Acceptance Rate: 34/136 (25%).

ASE'21 I. Gauthier, M. Lamothe*, G. Mussbacher, S. McIntosh. Is Historical Data an Appropriate Benchmark for Reviewer Recommendation? *In Proc. of the Int'l Conf. on Automated Software Engineering* (ACM/IEEE), pp. 30–41, Nov. 2021. Acceptance Rate: 120/440 (27%).

SANER'21 J. Sohn, Y. Kamei, S. McIntosh, S. Yoo. Leveraging Fault Localisation to Enhance Defect Prediction. *In Proc. of the Int'l Conf. on Software Analysis, Evolution, and Reengineering* (IEEE), pp. 284–294, Mar. 2021. Acceptance Rate: 42/165 (25%).

MSR'20 S. Mujahid, R. Abdalkareem, E. Shihab, S. McIntosh. Using Others' Tests to Avoid Breaking Updates. *In Proc. of the Int'l Conf. on Mining Software Repositories* (ACM/IEEE), pp. 466–476, Jun. 2020. Acceptance Rate: 45/171 (26%).

ESEC/FSE'19 T. Hirao*, S. McIntosh, A. Ihara, K. Matsumoto. The Review Linkage Graph for Code Review Analytics: A Recovery Approach and Empirical Study. *In Proc. of the Int'l Sym. on the Foundations of Software Engineering* (ACM), pp. 578–589, Aug. 2019. Acceptance Rate: 73/303 (24%).

SANER'19 RENE P. K. Sidhu*, G. Mussbacher, S. McIntosh. Reuse (or Lack Thereof) in Travis CI Specifications: An Empirical Study of CI Phases and Commands. *In Proc. of the Int'l Conf. on Software Analysis, Evolution, and Reengineering, Replication and Negative Results track* (IEEE), pp. 524–533, Feb., 2019.

APSEC'18 L. An, F. Khomh, S. McIntosh, M. Castelluccio. Why Did This Reviewed Code Crash? *In Proc. of the Asia-Pacific Software Engineering Conf.* (IEEE), pp. 396–405, Dec. 2018. Acceptance Rate: 52/191 (27%).

ESEM'18 F. El Zanaty*, T. Hirao*, S. McIntosh, A. Ihara, K. Matsumoto. An Empirical Study of Design Discussions in Code Review. *In Proc. of the Int'l Sym. on Empirical Software Engineering and Measurement* (ACM/IEEE), pp. 11:1–11:10, Oct. 2018. Acceptance Rate: 30/140 (21%).

ICSME'18 M. Robillard, M. Nassif, S. McIntosh. Threats of Aggregating Software Repository Data. *In Proc. of the Int'l Conf. on Software Maintenance and Evolution* (ACM/IEEE), pp. 508–518, Sep. 2018. Acceptance Rate: 45/174 (26%).

ICSME'18 Industry R. Wen*, D. Gilbert, M. G. Roche, S. McIntosh. BLIMP Tracer: Integrating Build Impact Analysis with Code Review. *In Proc. of the Int'l Conf. on Software Maintenance and Evolution, Industry track* (IEEE), pp. 685–694, Sep. 2018. Acceptance Rate: 15/32 (47%).

ASE'18 K. Gallaba*, C. Macho*, M. Pinzger, S. McIntosh. Noise and Heterogeneity in Historical Build Data: An Empirical Study of Travis CI. *In Proc. of the Int'l Conf. on Automated Software Engineering* (ACM/IEEE), pp. 87–97, Sep. 2018. Acceptance Rate: 69/346 (20%).

SANER'18 C. Macho*, S. McIntosh, M. Pinzger. Automatically Repairing Dependency-Related Build Breakage. *In Proc. of the Int'l Conf. on Software Analysis, Evolution, and Reengineering* (IEEE), pp. 106–117, Mar. 2018. Acceptance Rate: 39/146 (27%).

MSR'17a C. Macho*, S. McIntosh, M. Pinzger. Extracting Build Changes with BuildDiff. *In Proc. of the Int'l Conf. on Mining Software Repositories* (ACM/IEEE), pp. 368–378, May 2017. Acceptance Rate: 37/121 (31%).

MSR'17b B. Ghotra*, S. McIntosh, A. E. Hassan. A Large-Scale Study of the Impact of Feature Selection Techniques on Defect Classification Models. *In Proc. of the Int'l Conf. on Mining Software Repositories* (ACM/IEEE), pp. 146–157, May 2017. Acceptance Rate: 37/121 (31%).

ICSME'16 J. Shimagaki, Y. Kamei, S. McIntosh, D. Pursehouse, N. Ubayashi. Why are Commits being Reverted? A Comparative Study of Industrial and Open Source Projects. *In Proc. of the Int'l Conf. on Software Maintenance and Evolution* (ACM/IEEE), pp. 301–311, Oct. 2016. Acceptance Rate: 35/127 (29%).

ESEM'16 K. Miura, S. McIntosh, Y. Kamei, A. E. Hassan, N. Ubayashi. The Impact of Task Granularity on Co-evolution. *In Proc. of the Int'l Sym. on Empirical Software Engineering and Measurement* (ACM/IEEE), pp. 47:1–47:10, Sep. 2016. Acceptance Rate: 27/122 (22%).

ICSE'16a P. Thongtanunam*, S. McIntosh, A. E. Hassan, H. Iida. Revisiting Code Ownership and its Relationship with Software Quality in the Scope of Modern Code Review. *In Proc. of the Int'l Conf. on Software Engineering* (ACM/IEEE), pp. 1039–1050, May 2016. Acceptance Rate: 101/530 (19%).

ICSE'16b C. Tantithamthavorn*, S. McIntosh, A. E. Hassan, K. Matsumoto. Automated Parameter Optimization of Classification Techniques for Defect Prediction Models. *In Proc. of the Int'l Conf. on Software Engineering* (ACM/IEEE), pp. 321–332, May 2016. Acceptance Rate: 101/530 (19%).

ICSE'16 SEIP J. Shimagaki, Y. Kamei, S. McIntosh, A. E. Hassan, N. Ubayashi. A Study of the Quality-Impacting Practices of Modern Code Review at Sony Mobile. *In Proc. of the Int'l Conf. on Software Engineering, Software Engineering in Practice track* (ACM/IEEE), pp. 212–221, May 2016. Acceptance Rate: 28/108 (26%).

MSR'16a D. A. da Costa*, S. McIntosh, U. Kulesza, A. E. Hassan. The Impact of Switching to a Rapid Release Cycle on Integration Delay of Addressed Issues. *In Proc. of the Int'l Conf. on Mining Software Repositories* (ACM/IEEE), pp. 374–385, May 2016. Acceptance Rate: 36/103 (35%).
🏆 *ACM SIGSOFT distinguished paper award* 🏆

SANER'16a M. Beller, R. Bholanath, S. McIntosh, A. Zaidman. Analyzing the State of Static Analysis: A Large-Scale Evaluation in Open Source Software. *In Proc. of the Int'l Conf. on Software Analysis, Evolution, and Reengineering* (IEEE), pp. 470–481, Mar. 2016. Acceptance Rate: 52/140 (37%).

SANER'16b C. Macho*, S. McIntosh, M. Pinzger. Predicting Build Co-changes with Source Code Change and Commit Categories. *In Proc. of the Int'l Conf. on Software Analysis, Evolution, and Reengineering* (IEEE), pp. 541–551, Mar. 2016. Acceptance Rate: 52/140 (37%).
🏆 *Best paper nominee* 🏆

SANER'16 FoSE B. Adams, S. McIntosh. Modern Release Engineering in a Nutshell—Why Researchers Should Care. *In Proc. of the Int'l Conf. on Software Analysis, Evolution, and Reengineering, Future of Software Engineering track* (IEEE), pp. 78–90, Mar. 2016. *Invited Paper.*

ESEC/FSE'15 M. Nagappan, R. Robbes, Y. Kamei, É. Tanter, S. McIntosh, A. Mockus, A. E. Hassan. An Empirical Study of goto in C Code from GitHub Repositories. *In Proc. of the Int'l Sym. on the Foundations of Software Engineering* (ACM), pp. 404–414, Sep. 2015. Acceptance Rate: 74/291 (25%).

ICSE'15a C. Tantithamthavorn*, S. McIntosh, A. E. Hassan, A. Ihara, K. Matsumoto. The Impact of Mislabelling on the Performance and Interpretation of Defect Prediction Models *In Proc. of the Int'l Conf. on Software Engineering* (ACM/IEEE), pp. 812–823, May 2015. Acceptance Rate: 84/452 (19%).

ICSE'15b B. Ghotra*, S. McIntosh, A. E. Hassan. Revisiting the Impact of Classification Techniques on the Performance of Defect Prediction Models. *In Proc. of the Int'l Conf. on Software Engineering* (ACM/IEEE), pp. 789–800, May 2015. Acceptance Rate: 84/452 (19%).

MSR'15 P. Thongtanunam*, S. McIntosh, A. E. Hassan, H. Iida. Investigating Code Review Practices in Defective Files. *In Proc. of the Int'l Conf. on Mining Software Repositories* (ACM/IEEE), pp. 168–179, May 2015. Acceptance Rate: 32/106 (30%).

SANER'15a R. Morales, S. McIntosh, F. Khomh. Do Code Review Practices Impact Design Quality? A Case Study of the Qt, VTK, and ITK Projects. *In Proc. of the Int'l Conf. on Software Analysis, Evolution, and Reengineering* (IEEE), pp. 171–180, Mar. 2015. Acceptance Rate: 46/144 (32%).

SANER'15b X. Xia, D. Lo, S. McIntosh, E. Shihab, A. E. Hassan. Cross-Project Build Co-change Prediction. *In Proc. of the Int'l Conf. on Software Analysis, Evolution, and Reengineering* (IEEE), pp. 311–320, Mar. 2015. Acceptance Rate: 46/144 (32%).

ICSME'14a S. McIntosh, B. Adams, M. Nagappan, A. E. Hassan. Mining Co-change Information to Understand when Build Changes are Necessary. *In Proc. of the Int'l Conf. on Software Maintenance and Evolution* (ACM/IEEE), pp. 241–250, Oct. 2014. Acceptance Rate: 40/210 (19%).

ICSME'14b D. A. da Costa*, S. L. Abebe, S. McIntosh, Uirá Kulesza, A. E. Hassan. An Empirical Study of Delays in the Integration of Addressed Issues *In Proc. of the Int'l Conf. on Software Maintenance and Evolution* (ACM/IEEE), pp. 281–290, Oct. 2014. Acceptance Rate: 40/210 (19%).
🏆 *Best paper nominee* 🏆

ASE'14 S. van der Burg, E. Dolstra, S. McIntosh, J. Davies, D. M. Germán, A. Hemel. Tracing Software Build Processes to Uncover License Compliance Inconsistencies. *In Proc. of the Int'l Conf. on Automated Software Engineering* (ACM/IEEE), pp. 731–741, Sep. 2014. Acceptance Rate: 55/276 (20%).

ICSE'14 SEIP S. McIntosh, M. Poehlmann, E. Juergens, A. Mockus, B. Adams, A. E. Hassan, B. Haupt, C. Wagner. Collecting and Leveraging a Benchmark of Build System Clones to Aid in Quality Assessments. *In Proc. of the Int'l Conf. on Software Engineering, Software Engineering in Practice track* (ACM/IEEE), pp. 145–154, Jun. 2014. Acceptance Rate: 25/117 (21%).

MSR'14a S. McIntosh, Y. Kamei, B. Adams, A. E. Hassan. The Impact of Code Review Coverage and Code Review Participation on Software Quality: A Case Study of the Qt, VTK, and ITK Projects. *In Proc. of the Int'l Conf. on Mining Software Repositories* (ACM/IEEE), pp. 192–201, May 2014. Acceptance Rate: 29/85 (34%).
🏆 *Distinguished paper award* 🏆

MSR'14b T. Fukushima, Y. Kamei, S. McIntosh, K. Yamashita, N. Ubayashi. An Empirical Study of Just-In-Time Defect Prediction Using Cross-Project Models. *In Proc. of the Int'l Conf. on Mining Software Repositories* (ACM/IEEE), pp. 172–181, May 2014. Acceptance Rate: 29/85 (34%).
🏆 *Distinguished paper nominee* 🏆

ICSE'11 S. McIntosh, B. Adams, T. H. D. Nguyen, Y. Kamei, A. E. Hassan. An Empirical Study of Build Maintenance Effort. *In Proc. of the Int'l Conf. on Software Engineering* (ACM/IEEE), pp. 141–150, May 2011. Acceptance Rate: 62/441 (14%).

MSR'10 S. McIntosh, B. Adams, A. E. Hassan. The Evolution of ANT Build Systems. *In Proc. of the Int'l Conf. on Mining Software Repositories* (ACM/IEEE), pp. 42–51, May 2010. Acceptance Rate: 16/51 (31%).
🏆 *Best paper nominee* 🏆

3.3 Short Articles (4–6 pages) in International Conference Proceedings (11 Total)

Shorthand	Conference	Publisher	CORE	#
ICSME	Int'l Conf. on Software Maintenance and Evolution	IEEE	A	1
MSR	Int'l Conf. on Mining Software Repositories	ACM/IEEE	A	9
SANER	Int'l Conf. on Software Analysis, Evolution, and Reengineering	IEEE	B	1

MSR'21 RR M. Meidani*, M. Lamothe*, S. McIntosh. Assessing the Exposure of Software Changes: The DiPiDi Approach. *In Proc. of the Int'l Conf. on Mining Software Repositories, Registered Reports track* (ACM/IEEE), pp. 1–6, May 2021. Acceptance Rate: 6/10 (60%).

MSR'19 Challenge D. Abric*, O. Clark*, M. Caminiti*, K. Gallaba*, S. McIntosh. Can Duplicate Questions on Stack Overflow Benefit the Software Development Community? *In Proc. of the Int'l Conf. on Mining Software Repositories, Mining Challenge track* (ACM/IEEE), pp. 230–234, May 2019. Acceptance Rate: 14/27 (52%).
🏆 *Best challenge track student presentation* 🏆

MSR'18a Challenge N. Rabbani*, M. Harvey*, S. Saquif*, K. Gallaba*, S. McIntosh. Revisiting "Programmers' Build Errors" in the Visual Studio Context: A Replication Study using IDE Interaction Traces. *In Proc. of the Int'l Conf. on Mining Software Repositories, Mining Challenge track* (ACM/IEEE), pp. 98–101, May 2018. Acceptance Rate: 13/31 (42%).

MSR'18b Challenge R. Amlekar*, A. F. R. Gamboa*, K. Gallaba*, S. McIntosh. Do Software Engineers Use Auto-completion Features Differently Than Other Developers? *In Proc. of the Int'l Conf. on Mining Software Repositories, Mining Challenge track* (ACM/IEEE), pp. 86–89, May 2018. Acceptance Rate: 13/31 (42%).

ICSME'17 NIER Q. Cao*, R. Wen*, S. McIntosh. Forecasting the Duration of Incremental Build Jobs. *In Proc. of the Int'l Conf. on Software Maintenance and Evolution, New Ideas and Emerging Results track* (IEEE), pp. 524–528, Sep. 2017. Acceptance Rate: 15/26 (58%).

MSR'17a Challenge Y. Khan*, Y. Gupta*, K. Gallaba*, S. McIntosh. The Impact of the Adoption of Continuous Integration on Developer Attraction and Retention. *In Proc. of the Int'l Conf. on Mining Software Repositories, Mining Challenge track* (ACM/IEEE), pp. 491–494, May 2017. Acceptance Rate: 14/29 (48%).

MSR'17b Challenge M. Manglaviti*, E. Coronado-Montoya*, K. Gallaba*, S. McIntosh. An Empirical Study of the Personnel Overhead of Continuous Integration. *In Proc. of the Int'l Conf. on Mining Software Repositories, Mining Challenge track* (ACM/IEEE), pp. 471–474, May 2017. Acceptance Rate: 14/29 (48%).

MSR'16a Challenge J. G. Barnett*, C. K. Gathuru*, L. S. Soldano*, S. McIntosh. The Relationship between Commit Message Detail and Defect Proneness in Java Projects on GitHub. *In Proc. of the Int'l Conf. on Mining Software Repositories, Mining Challenge track* (ACM/IEEE), pp. 496–499, May 2016. Acceptance Rate: 10/24 (42%).
🏆 *Challenge runner-up* 🏆

MSR'16b Challenge C. Désarmeaux*, A. Pecatikov*, S. McIntosh. The Dispersion of Build Maintenance Activity across Maven Lifecycle Phases. *In Proc. of the Int'l Conf. on Mining Software Repositories, Mining Challenge track* (ACM/IEEE), pp. 492–495, May 2016. Acceptance Rate: 10/24 (42%).

MSR'14 Challenge K. Yamashita, S. McIntosh, Y. Kamei, N. Ubayashi. Magnet or Sticky? An OSS Project-by-Project Typology. *In Proc. of the Int'l Conf. on Mining Software Repositories, Mining Challenge track* (ACM/IEEE), pp. 344–347, May 2014. Acceptance Rate: 9/19 (47%).

SANER'14 ERA S. McIntosh, K. Legere, A. E. Hassan. Orchestrating Change: An Artistic Representation of Software Evolution. *In Proc. of the Int'l Conf. on Software Analysis, Evolution, and Reeng., Early Research Achievements track* (IEEE), pp. 0–353, 357 Mar..2014 Acceptance Rate: 12/33 (36%).

3.4 Invited Talks

GERRIT'23 S. McIntosh. Latest Advances in Code Review Research. *Gerrit User Summit*, Sep. 2023.

U. Zurich'23 S. McIntosh. Incorporating Broader Contexts Into Code Review. *University of Zurich*, Mar. 2023.

GERRIT'21 S. McIntosh. Promoting Situational Awareness in Code Review. *Gerrit Virtual User Summit*, Dec. 2021.

SECONFIG'19 S. McIntosh. The Influence of Noise in Continuous Integration Data. *Int'l Workshop on Software Eng. for Infrastructure and Configuration Code* (co-located with ASE'19), San Diego, USA, Nov. 2019. *Keynote*.

KLAGENFURT'19 S. McIntosh. Use, Misuse, and Reuse of Continuous Integration Features. *University of Klagenfurt*, Austria, Apr. 2019.

GERRIT'18 S. McIntosh. Supporting and Understanding Code Review. *Gerrit User Summit*, USA, Nov. 2018.

MICROSOFT'18 S. McIntosh. (Mis)use of Continuous Integration Features. *Microsoft Continuous Deployment Workshop*, Redmond, USA, Aug. 2018.

GERRIT'17 S. McIntosh. Mining Gerrit Repositories for Contentious Reviews and Community Evolution. *Gerrit User Summit*, London, UK, Oct. 2017.

SHONAN'17 S. McIntosh. Building on an unsound foundation: How release pipelines can impact our predictive models. National Institute of Informatics (NII) Shonan Meeting #95, Japan. Mar. 2017. *Invited lecture*.

NUANCE'16 S. McIntosh. Understanding and Supporting Modern Software Development and Release Teams. *Nuance Communications nCode Summit*, Montréal, Canada. Sep. 2016. *Keynote*.

GERRIT'15 S. McIntosh. Mining Gerrit Repositories to Study the Impact of Modern Code Review Practices *Gerrit User Summit*, Mountain View, USA, Nov. 2015.

COW'15 S. McIntosh. Building on an Unsound Foundation: How Release Pipelines can Impact our Predictive Models. *44th CREST Open Workshop, Predictive Modelling for Software Eng.*, UCL, London, UK, Nov. 2015.

Theses

Ph.D. S. McIntosh. Studying the Software Development Overhead of Build Systems. Queen's University, Canada. Jul. 2015.
🏆 *Gov. General's Academic Gold Medal* 🏆

M.Sc. S. McIntosh. Studying the Evolution of Build Systems. Queen's University, Canada. Jan. 2011.

🏆 *Queen's University School of Computing Distinguished Thesis Award* 🏆

4 Trainee Supervision

Name	Role	Degree	Period	Current Status
Rungroj Maipradit	Supervisor	PDF	Feb'23–Present	Ongoing
Mahmoud Alfadel	Supervisor	PDF	Jan'22–Present	Ongoing
Maxime Lamothe	Supervisor	PDF	Jan'21–Jun.'21	Assistant Professor at Polytechnique Montréal

Mingyang Yin	Supervisor	Ph.D.	Sep'22–Present	Ongoing
Nimmi Weeraddana	Supervisor	Ph.D.	May'22–Present	Ongoing
Mahtab Nejati	Supervisor	Ph.D.	Jan'22–Present	Ongoing
Farshad Kazemi	Supervisor	Ph.D.	Jan'20–Present	Ongoing
Sogol Masoumzadeh	Co-supervisor	Ph.D.	Sep'20–Present	Ongoing (McGill U.)
Keheliya Gallaba	Supervisor	Ph.D.	Sep'16–Present	Research Scientist at Huawei Canada
Toshiki Hirao	Co-supervisor	Ph.D.	Jun'16–Feb'20	Assistant Professor at Nara Institute of Science and Technology, Japan
Christian Macho	Co-supervisor	Ph.D.	Aug'15–May'19	Research Associate at U. Klagenfurt, Austria
Chakkrit Tantithamthavorn	Co-supervisor	Ph.D.	May'14–Sep'16	Senior Lecturer† at Monash U., Australia
Patanamon Thongtanunam	Co-supervisor	Ph.D.	May'14–Sep'16	Senior Lecturer† at U. Melbourne, Australia
Daniel Alencar da Costa	Co-supervisor	Ph.D.	Jan'14–Feb'16	Senior Lecturer† at U. Otago, New Zealand
Akinbowale Akin-Taylor	Supervisor	M.Math.	Jan'23–Present	Ongoing
Shaquille Pearson	Supervisor	M.Math.	Jan'23–Present	Ongoing
Gareema Ranjan	Supervisor	M.Math.	Sep'22–Present	Ongoing
Gengyi Sun	Supervisor	M.Math.	Sep'21–Present	Ongoing
Xiaoyan Xu	Supervisor	M.Math.	Sep'21–Present	Ongoing
Xueyao Yu	Co-supervisor	M.Math.	May'21–May'23	TBD
Zhili Zeng	Supervisor	M.Math.	May'21–Jun'23	TBD
Mehran Meidani	Supervisor	M.Math.	Jan'20–Dec'22	SE at StackAdapt
Shivashree Vysali	Co-supervisor	M.Sc.	Sep'18–Dec'20	SE at Udacity
Faizan Khan	Co-supervisor	M.Sc.	Sep'18–Dec'20	SE at Plot.ly
Farida El Zanaty	Supervisor	M.Sc.	Jan'18–Dec'19	DS at Wise Systems
Christophe Rezk	Supervisor	M.Sc.	Sep'17–Apr'21	Consultant at Accenture
Puneet K. Sidhu	Co-supervisor	M.Sc.	Sep'17–Aug'19	DS at AlayaCare
Ruiyin Wen	Supervisor	M.Sc.	Sep'16–Aug'18	SE at Dropbox
Baljinder Ghotra	Co-supervisor	M.Sc.	May'14–May'17	SE at BlackBerry
Ho Yin Kam	Supervisor	B.Eng.	May'21–Aug'21	Unknown
Durham Abric	Supervisor	B.Eng.	Sep'18–Apr'19	Markets Analyst at RBC
Matthew Caminiti	Supervisor	B.Eng.	Sep'18–Apr'19	SE at IHS Markit
Oliver E. Clark	Supervisor	B.Eng.	Sep'18–Apr'19	SE at Cox Automotive
Rahul Amlekar	Supervisor	B.Eng.	Sep'17–Apr'18	SE at Microsoft
Andrés F. R. Gamboa	Supervisor	B.Eng.	Sep'17–Apr'18	SE at Desjardins
Michael S. Harvey	Supervisor	B.Eng.	Sep'17–Apr'18	SE at Genetec
Noam Rabbani	Supervisor	B.Eng.	Sep'17–Apr'18	SE at Google
Sadnan Saquif	Supervisor	B.Eng.	Sep'17–Apr'18	Lecturer at Concordia U.
Eduardo Coronado-Montoya	Supervisor	B.Eng.	Sep'16–Apr'17	SE at Uber
Yash Gupta	Supervisor	B.Eng.	Sep'16–Apr'17	Assoc. at Morgan Stanley
Yusaira Khan	Supervisor	B.Eng.	Sep'16–Apr'17	SE at Nulogy
Marco Manglaviti	Supervisor	B.Eng.	Sep'16–Apr'17	Manager at Deloitte
Qi Cao	Supervisor	B.Eng.	May'16–Aug'16	SE at Stripe
Jacob Barnett	Supervisor	B.Eng.	Sep'15–Apr'16	CTO at HeraldAPI
Casimir Désarmeaux	Supervisor	B.Eng.	Sep'15–Apr'16	Technology Architect at Norges Bank
Charles Gathuru	Supervisor	B.Eng.	Sep'15–Apr'16	SE at Cisco
Andrea Pecatikov	Supervisor	B.Eng.	Sep'15–Apr'16	Director at Buy Buddy
Luke Soldano	Supervisor	B.Eng.	Sep'15–Apr'16	SE at Shure

PDF: Postdoc, SE: Software Engineer/Developer; DS: Data Scientist/Developer

† Equivalent to tenured Associate Professor in the Canadian academic system.

5 Service

5.1 Editorships

- Associate Editor, IEEE Software, 2023–Present
- Senior Associate Editor, Journal of Systems and Software (JSS), 2020–Present
- Associate Editor, Journal of Systems and Software (JSS), 2017–2020
- Guest Editor, Empirical Software Eng. (EMSE), 2018, 2021, 2022, 2023

5.2 Special Interest Group Roles

- Co-chair, Digital Learning, ACM Special Interest Group on Software Eng. (ACM SIGSOFT), 2018–Present

5.3 Steering Committee Membership

- Member, Int'l Conf. on Mining Software Repositories (MSR), 2022–Present
- Chair, Int'l Conf. on Predictive Models and Data Analytics in Software Eng. (PROMISE), 2021–Present
- Member, Int'l Conf. on Predictive Models and Data Analytics in Software Eng. (PROMISE), 2018–2020

5.4 Organizing Committee Membership

- Co-chair, Registered Reports, Int'l Conf. on Software Maintenance and Evolution (ICSME'24 RR)
- Co-chair, Early Research Achievements, Int'l Conf. on Software Analysis, Evolution, and Reengineering (SANER'24 ERA)
- Co-chair, New Ideas and Emerging Results, Int'l Conf. on Automated Software Engineering (ASE'23 NIER)
- General chair, Int'l Conf. on Predictive Models and Data Analytics in Software Engineering (PROMISE '21–'23)
- Co-chair, Technical program, Int'l Conf. on Mining Software Repositories (MSR'22)
- Co-chair, Proceedings, Int'l Conf. on Software Engineering (ICSE'22)
- Co-chair, Artifact Evaluation, Int'l Symp. on the Foundations of Software Engineering (FSE'21 Artifacts)
- Co-chair, Student Mentorship Workshop, Int'l Conf. on Software Engineering (ICSE'20)
- Co-chair, Formal Tool Demonstrations, Int'l Symp. on the Foundations of Software Engineering (FSE'20 Tools)
- Co-chair, Student Volunteers, Int'l Conf. on Software Engineering (ICSE'19)
- Co-chair, Tutorials, Int'l Conf. on Agile Software Development (XP'19)
- Co-chair, Tutorials, Asia-Pasific Software Engineering Conf. (APSEC'18)
- Co-chair, Technical program, Int'l Conf. on Predictive Models and Data Analytics in Software Engineering (PROMISE'18)
- Co-chair, Early Research Achievements, Int'l Conf. on Software Analytics, Evolution, and Reengineering (SANER'18 ERA)
- Co-chair, Technical program, Int'l Workshop on Release Engineering (RELENG'16)
- Co-chair, Technical program, Int'l Workshop on Empirical Software Engineering in Practice (IWESEP'16)

5.5 Seminar Co-organizer

- Anti-patterns and Defects: Synergies, Challenges, and Opportunities. Co-organized by R. G. Kula, F. Palomba, T. Kobayashi. *NII Shonan Meeting #211*, Japan. Dec. 2024.
- Release Engineering for Mobile Applications. Co-organized by Y. Kamei and M. Nagappan. *National Institute of Informatics (NII) Shonan Meeting #152*, Japan. Dec. 2019.

5.6 Selected Program Committee Membership

- Int'l Conf. on Software Engineering (ICSE'20, '21, '23)
- Int'l Symposium on the Foundations of Software Engineering (ESEC/FSE'20, '23)
- Int'l Conf. on Automated Software Engineering (ASE'18, '19)
- Int'l Conf. on Object-Oriented Programming, Systems, Languages, and Apps (OOPSLA'17)
- Int'l Symposium on Empirical Software Engineering and Measurement (ESEM'17–'21)
- Int'l Conf. on Software Maintenance and Evolution (ICSME'16–'18, '20, '22, '23)
- Int'l Conf. on Mining Software Repositories (MSR '16, '17, '18, '20, '21, '24)
- Int'l Conf. on Software Analysis, Evolution, and Reengineering (SANER'18–'23)
- Int'l Conf. on Program Comprehension (ICPC '18)
- Int'l Conf. on Predictive Models and Data Analytics in Software Engineering (PROMISE'17, '19, '20)

6 Teaching

6.1 Course Development

Course Name	Role	Course Description	Pedagogical Features
Software Delivery	Course Creator	Fundamentals of design, development, and operation of code integration processes, release pipelines, and deployment strategies for software systems.	Active learning techniques including jigsaw readings, pair-and-share, live coding, in-class exercises.
Software Analytics for Release Pipelines	Course Creator	The application of analytics (i.e., the discovery and communication of patterns in data) to software release practices.	Seminar-based investigation of seminal and recent literature.

6.2 Undergraduate Courses Instructed

- Software Delivery (University of Waterloo), Winter ’23
- Software Design and Architecture (University of Waterloo), Winter ’21, ’22
- Software Delivery (McGill University), Fall ’18, ’19
- Software Requirements Engineering (McGill University), Fall ’19
- Software Validation (McGill University), Fall ’17
- Introduction to Software Engineering (McGill University), Fall ’15, ’16, ’17, ’18

6.3 Graduate Courses Instructed

- Software Analytics for Release Pipelines (University of Waterloo), Winter ’21, ’22, ’23
- Software Analytics (McGill University), Winter ’17, ’18, ’19, ’20

7 Education

Degree	Discipline	Institution	Date of Convocation
Ph.D.	Software Engineering	Queen’s University	20-Nov-2015
M.Sc.	Software Engineering	Queen’s University	20-May-2011
B.A.Comp.	Applied Computing	University of Guelph	01-Jun-2009

8 Employment

Position	Institution	Start Date	End Date
Ross & Muriel Cheriton Faculty Fellow	University of Waterloo	May 2023	Present
Associate Professor	University of Waterloo	Jul. 2020	Present
Canada Research Chair (Tier 2)	McGill University	Oct. 2019	Jun. 2020
Assistant Professor	McGill University	Aug. 2015	Jun. 2020
Software Engineer	EMC^2 Corporation	Sep. 2010	Aug. 2012
Freelance Software Engineer	EMC^2 Corporation	Jan. 2009	Aug. 2009

9 Professional Memberships

- Senior Member, Institute of Electrical and Electronics Engineers (IEEE)
- Professional Member, Association for Computer Machinery (ACM)