Sarah Nadi
Curriculum Vitae

✉ sarah.nadi@nyu.edu

📱

🖥 www.sarahnadi.org

Overview

I am an Associate Professor of Computer Science at New York University in Abu Dhabi (NYUAD). I am currently on leave from the University of Alberta where I hold a Tier II Canada Research Chair in Software Reuse. My research provides automated support tools that help software developers accomplish their tasks more efficiently. I have a long line of work on supporting variability and reuse practices, while my recent work focusing on supporting developers as they use software libraries, including the initial selection process, correctly using the library's API, and potential migration to newer alternative libraries.

Research expertise: mining software repositories, code recommender systems, empirical software engineering, software variability, software maintenance, software evolution, use of large language models for software engineering tasks.

Academic Appointments

January 2024 - current	**Associate Professor**, *Computer Science*, New York University in Abu Dhabi (NYUAD), Abu Dhabi.
July 2022 - current	**Associate Professor**, *Department of Computing Science*, University of Alberta (UofA), Canada. On leave as of January 2024
July 2016 - June 2022	**Assistant Professor**, *Department of Computing Science*, University of Alberta (UofA), Canada.
Oct. 2014 - June 2016	**Postdoctoral Researcher**, *Computer Science*, Technische Universität Darmstadt (TU Darmstadt), Germany. Advisor: Mira Mezini

Education

2014	**PhD in Computer Science**, *University of Waterloo*, Canada.
Thesis	Variability Anomalies in Software Product Lines
Advisor	Richard C. Holt

2009	**MMath in Computer Science**, *University of Waterloo*, Canada.
Thesis	DRACA: Decision Support for Root Cause Analysis and Change Impact Analysis
Advisor	Richard C. Holt

2007	**BSc in Computer Science**, *The American University in Cairo*, Egypt.

Honors and Awards

Research	**Tier II Canada Research Chair in Software Reuse**, Canada Research Chairs (CRC) Program, 2017 - 2027 (two terms).
Mentoring	**UofA Award for Outstanding Mentorship in Undergraduate Research & Creative Activities**, March 2021, UofA.
Service	**Distinguished Reviewer Award**, IEEE International Conference on Software Maintenance and Evolution (ICSME), 2021
Teaching	**Instructor of the Month**, Faculty of Science, UofA, October 2019.
Service	**Distinguished Reviewer Award**, IEEE/ACM International Conference on Automated Software Engineering (ASE), 2019.

Research	**Special Mention, Free, Open Source Software (FOSS) Impact Award,** ACM International Conference on Mining Software Repositories (MSR), 2019.
Research	**Honorable Mention, IBM CAS Faculty Fellow of the Year**, 2018.
Service	**Distinguished Reviewer Award**, IEEE/ACM International Conference on Automated Software Engineering (ASE), 2018.
Service	**Distinguished Reviewer Award**, IEEE International Conference on Software Maintenance and Evolution (ICSME), 2017.
Research	**Best Paper Award**, Annual International Conference on Computer Science and Software Engineering (CASCON), 2010.

Industrial Experience

GitHub	**Research Engineer**, *GitHub Next*, September 2022 - June 2023. Sabbatical spent working with Max Schaefer's Applied Software Testing, Reliability and Analysis (ASTRA) GitHub Next team..
ITWorx	**Software Engineer**, *ITWorx*, Egypt, July 2007 - April 2008.
ITWorx	**Software Engineer Intern**, *ITWorx*, Egypt, June 2006 - July 2006.
Vodafone	**IT Support Intern**, *Vodafone*, Egypt, June 2005 - July 2005.

Student Supervision

Co-supervisions are explicitly mentioned and marked with an asterisk.

Current Research Team

PhD	**Akalanka Galappaththi** (Sept 2020 - current)
PhD	**Mohayeminul Islam** (Sept 2020 - current)
Masters	**Afiya Fahmida Sarah** (Sept 2022 - current)

Previous Postdocs

Postdoc	**Ajay Kumar Jha**, UofA. Research directions: *Software Testing, Mining API Usage Patterns, API Misuse Detection*, 2020-2022. *Current Position:* Tenure-track Assistant Professor, North Dakota State University, USA.

Graduated Students (Reverse Chronological Order)

Masters	**Henry Tang**, UofA. *Evaluating Software Documentation Quality* (2022). *First Position:* Instructor, Dept. Of Computing Science, UofA
Masters	**Mansur Gulami**, UofA. *A Human-in-the-loop Approach to Generate Annotation Usage Rules* (2022). *First Position:* Software Engineer, Intuit, Canada.
Masters	**Max Ellis**, UofA. *A Systematic Comparison of Two Refactoring-aware Merging Techniques* (2022). *First Position:* Junior Software Engineer, Act-On, USA.
Masters	**Batyr Nurryev**, UofA. *Mining Annotation Usage Rules of Enterprise Java Frameworks* (2021). *First Position:* Software Engineer, BorealisAI, Canada.
Masters	**Moein Owhadi-Kareshk**, UofA. *Predicting Textual Merge Conflicts* (2020). *First Position:* Machine Learning Engineer, AltaML, Canada. Note: Moein joined as a PhD student in 2017 but converted to the Master's program in Dec 2019 due to personal reasons. He received the department's PhD Early Achievement Award shortly before changing programs.
Masters	**Fernando Lopez de la Mora**, UofA. *Providing Software Library Selection Assistance By Using Metric-Based Comparisons* (2018). *First Position:* Software Development Engineer, Amazon Canada

Masters	**Benyamin Noori**, UofA. *Leveraging Crowd-sourced Information to Guide Library Usage* (2018). *First Position:* Software Developer, Desire 2 Learn, Canada
Masters	**Samer Al Masri**, UofA. *Static Versus Dynamic Polymorphism When Implementing Variability in C++* (2018). *First Position:* Software Developer, IBM Canada
Masters	**Mehran Mahmoudi**, UofA. *An Empirical Investigation of Software Merging Challenges* (2018). *First Position:* Software Engineer, Google Canada
PhD*	**Ervina Cergani**, TU Darmstadt. *Machine Learning as a Mean to Uncover Latent Knowledge from Source Code* (2019) – co-supervised with Mira Mezini from Oct 2014 until May 2018. *First Position:* Data Scientist, Process Analytics Factory, Germany
PhD*	**Sven Amann**, TU Darmstadt. *A Systematic Approach to Benchmark and Improve Automated Static Detection of Java-API Misuses* (2018) – co-supervised with Mira Mezini. *First Position:* Software Quality Consultant, CQSE GmbH
PhD*	**Sebastian Proksch**, TU Darmstadt. *Capturing Enriched Event Streams: Towards a General Platform for In-IDE Experiments* (2017) – co-supervised with Mira Mezini. *First Position:* Postdoctoral Researcher, University of Zurich. *Current Position:* Assistant Professor, TU Delft
Masters*	**Marco Radavelli**, TU Darmstadt, *Simplifying Boolean Constraints from Highly Configurable Software* (2016) – co-supervised with Angelo Gargantini from University of Bergamo. *First Position:* PhD Student, University of Bergamo
Masters	**Hamza Zulfiqar**, TU Darmstadt. *Detecting Unintended Feature Interactions* (2016). *First Position: Software developer at Dtango, Berlin*
Masters*	**Daniel Jonsson**, Chalmers University of Technology. *A Case Study of Interactive Conflict-Resolution Support* (2016) – co-supervised with Thorsten Berger. *First Position:* Systems developer at Bit Addict, Sweden
Masters*	**Isak Eriksson & Patrick Wallgren**, Chalmers University of Technology. *A Study of Merge-Conflict Resolutions in Open-Source Software* (2016) – co-supervised with Thorsten Berger and Julia Rubin.
Masters*	**Riadh Chtara**, TU Darmstadt. *Feedback Driven Development of Cloud Applications* (2015) – external student co-supervised with Anis Charfi from SAP. *First Position:* Software developer at SAP in Potsdam
Masters	**Irfan Musa**, TU Darmstadt. *Modelling of Cryptographic Components using Clafer* (2015)
Masters*	**David Dahlen**, TU Darmstadt. *Identification of High-Quality Answers Containing Code Snippets on Stack Overflow* (2015) – co-supervised with Sebastian Proksch and Sven Amman. *First Position:* IT Consultant in Germany

Past Research Assistants

Ugrad RA*	**Xichen Pan**, *Unit Test Migration* (May 2021 - Sept 2021) – co-supervised with Ajay Kumar Jha.
Ugrad RA	**Xiaole Zeng**, *Metric-based Library Comparisons* (Jan 2021 - April 2021). *First Position:* Software Developer, Google.
Ugrad RA	**Katherine Mae Patenio**, *Explaining merge conflicts* (May 2020 - April 2021). *First Position:* Software Engineer, Mozilla, Canada

Ugrad RA	**Rehab El-Hajj**, *Metric-based Library Comparisons* (May 2019 - Sept 2020). *First Position:* Medical Student, University of Calgary, Canada
Ugrad RA	**Henry Tang**, *Investigating Crowd-sourced Answer Edits on Stack Overflow* (May 2019 - August 2020). *First Position:* MSc student, UofA
Ugrad RA	**Ryan Shukla**, *Variability Aware Analysis for C++* (May - Dec 2019 with NSERC USRA). *First Position:* Intern, IBM Canada
Ugrad RA	**Lida Ling**, *Data Set of Task-code Pairs* (June - Aug 2019).
Ugrad RA	**Aida Radu**, *Data Set of Non-functional Bugs* (May - Aug 2018 with NSERC USRA).
Ugrad RA	**Jacob Reckhard**, *Variability Aware Analysis for C++* (May - Oct 2018).
Ugrad RA	**Imtihan Ahmed**, *Designing new assignments for CMPUT 201* (Sept - Dec 2017). *First Position:* Software engineer, IBM Canada followed by MSc student, University of Toronto
Ugrad RA	**Nazim Uddin Bhuiyan**, *Variability Aware Analysis for C++* (May - Dec 2017). *First Position:* Intern, IBM Canada, followed by full-time employment there
Grad RA	**Ram Kammath**, *Implementing a Clafer Configurator for Cryptography Components* (May - Dec 2015).

Awards Received by Supervised Students

Provincial	Mohayeminul Islam, **Alberta Graduate Excellence Scholarship (AGES)**, 2022
Provincial	Akalanka Galappaththi, **Alberta Graduate Excellence Scholarship (AGES)**, 2021
National	Henry Tang, **NSERC CGS-M award**, 2021-2022.
Departmental	Batyr Nuryyev, **Runner up for Master's Early Achievement Award**, Department of Computing Science, University of Alberta, 2020.
Departmental	Moein Owahdi-Kareshk, **PhD Early Achievement Award**, Department of Computing Science, University of Alberta, 2019.
Departmental	Moein Owahdi-Kareshk, **2nd Place for Best Poster Award**, ReverseExpo, Department of Computing Science, University of Alberta, 2019.
Departmental	Mehran Mahmoudi, **Runner up for Master's Early Achievement Award**, Department of Computing Science, University of Alberta, 2017.

Publications

Supervised student/postdoc names are underlined. Authors ordered by contributions.

Refereed Journal Papers

TSE '23	<u>Max Ellis</u>, **Sarah Nadi**, and Danny Dig. "Operation-Based Refactoring-Aware Merging: An Empirical Evaluation". In: *IEEE Transactions on Software Engineering* 49.4 (2023), pp. 2698–2721.
TSE '23	Max Schäefer, **Sarah Nadi**, Aryaz Eghbali, and Frank Tip. "An Empirical Evaluation of Using Large Language Models for Automated Unit Test Generation". In: *IEEE Transactions on Software Engineering* (2023).
EMSE '22a	**Sarah Nadi** and Nourhan Sakr. "Selecting Third-party Libraries: The Data Scientist's Perspective". In: *Empirical Software Engineering* 28 (2022), pp. 1–15.
EMSE '22b	John Businge, Moses Openja, **Sarah Nadi**, and Thorsten Berger. "Reuse and Maintenance Practices among Divergent Forks in Three Software Ecosystems". In: *Empirical Software Engineering* 27.2 (2022), pp. 1–47.

EMSE '21a Henry Tang and **Sarah Nadi**. "On Using Stack Overflow Comment-Edit Pairs to Recommend Code Maintenance Changes". In: *Empirical Software Engineering* (2021), pp. 1–39.

EMSE '21b Shamsa Abid, Shafay Shamail, Hamid Abdul Basit, and **Sarah Nadi**. "FACER: An API Usage-based Code-example Recommender for Opportunistic Reuse". In: *Empirical Software Engineering* 26.6 (2021), pp. 1–58.

TSE '18 Sven Amann, Hoan A. Nguyen, **Sarah Nadi**, Tien N. Nguyen, and Mira Mezini. "A Systematic Evaluation of Static API-Misuse Detectors". In: *IEEE Transactions on Software Engineering* (2018), pp. 236–245.

TSE '17 Guido Salvaneschi, Sebastian Proksch, Sven Amann, **Sarah Nadi**, and Mira Mezini. "On the Positive Effect of Reactive Programming on Software Comprehension: An Empirical Study". In: *IEEE Transactions on Software Engineering* 43.12 (2017), pp. 1125–1143.

TSE '15 **Sarah Nadi**, Thorsten Berger, Christian Kästner, and Krzysztof Czarnecki. "Where do Configuration Constraints Stem From? An Extraction Approach and an Empirical Study". In: *IEEE Transactions on Software Engineering* 41.8 (2015), pp. 820–841.

JSEP '14 **Sarah Nadi** and Richard C. Holt. "The Linux Kernel: A Case Study of Build System Variability". In: *Journal of Software: Evolution and Process* 26.8 (2014), pp. 730–746.

Refereed Conference Papers

MSR '23 Henry Tang and **Sarah Nadi**. " Evaluating Software Documentation Quality". In: *Proceedings of the 20th ACM International Conference on Mining Software Repositories (MSR)*. 2023.

SANER '23 ERA Ajay Kumar Jha, Mohayeminul Islam, and **Sarah Nadi**. "JTestMigBench and JTestMigTax: A benchmark and taxonomy for unit test migration". In: *IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER) – Early Research Achievement Track*. 2023, pp. 713–717. DOI: 10.1109/SANER56733.2023.00077.

MSR '23 Data Mohayeminul Islam, Ajay Kumar Jha, **Sarah Nadi**, and Ildar Akhmetov. "PyMigBench: A Benchmark for Python Library Migration". In: *Proceedings of the 20th ACM International Conference on Mining Software Repositories (MSR) – Data Showcase Track*. 2023.

ICSME '23 Sharon Chee Yin Ho, Vahid Majdinasab, Mohayeminul Islam, Diego Elias Costa, Foutse Khomh Emad Shihab, **Sarah Nadi**, and Muhammad Raza. "An Empirical Study on Bugs Inside PyTorch: A Replication Study". In: *IEEE International Conference on Software Maintenance and Evolution (ICSME)*. 2023.

SecDev '23 Stefan Krüger, Michael Reif, Anna-Katharina Wickert, **Sarah Nadi**, Karim Ali, Eric Bodden, Yasemin Acar, Mira Mezini, and Sascha Fahl. "Securing Your Crypto-API Usage Through Tool Support - A Usability Study". In: *IEEE Secure Development Conference (SecDev)*. 2023, pp. 14–25. DOI: 10.1109/SecDev56634.2023.00015.

MSR '22 Nhan Nguyen and **Sarah Nadi**. "An Empirical Evaluation of GitHub Copilot's Code Suggestions". In: *Proceedings of the 19th ACM International Conference on Mining Software Repositories (MSR)*. 2022. Accepted to appear. (Acceptance Ratio: 45/137 = 34%).

CASCON '22 Mansur Gulami, Ajay Kumar Jha, **Sarah Nadi**, Karim Ali, Emily Jiang, and Yee-Kang Chang. "A Human-in-the-loop Approach to Generate Annotation Usage Rules". In: *Proceedings of the IBM CASCON 32nd Annual International Conference on Computer Science and Software Engineering (CASCONxEVOKE)*. 2022, pp. 1–10. Acceptance Ratio: unavailable.

ICSME '22 Batyr Nuryyev, Ajay Kumar Jha, **Sarah Nadi**, Yee-Kang Chang, Emily Jiang, and Vijay Sundaresan. "Mining Annotation Usage Rules: A Case Study with MicroProfile". In: *Proceedings of the 38th IEEE International Conference on Software Maintenance and Evolution – Industry Track*. 2022. Acceptance Ratio: 10/20 = 50%.

MSR '22 Akalanka Galappaththi, **Sarah Nadi**, and Christoph Treude. "Does This Apply to Me? An Empirical Study of Technical Context in Stack Overflow". In: *Proceedings of the 19th ACM International Conference on Mining Software Repositories (MSR)*. 2022. Acceptance Ratio: 45/137 = 34%.

ICSE '21a SEIP Batyr Nuryyev, **Sarah Nadi**, Nazim Uddin Bhuiyan, and Leonardo Bandareli. "Challenges of Implementing Software Variability in Eclipse OMR: An Interview Study". In: *Proceedings of the 43rd IEEE/ACM International Conference on Software Engineering: Software Engineering in Practice (ICSE-SEIP)*. 2021, pp. 1–10. (Acceptance Ratio: 41/121 = 34%).

ICSE '21b SEIP Patrick Franz, Thorsten Berger, Ibrahim Fayaz, **Sarah Nadi**, and Evgeny Groshev. "ConfigFix: Interactive Configuration Conflict Resolution for the Linux Kernel". In: *Proceedings of the 43rd IEEE/ACM International Conference on Software Engineering: Software Engineering in Practice (ICSE-SEIP)*. 2021, pp. 1–10. (Acceptance Ratio: 41/121 = 34%).

SCAM '20 Ajay Kumar Jha and **Sarah Nadi**. "Annotation practices in Android apps". In: *Proceedings of 30th IEEE International Working Conference on Source Code Analysis & Manipulation (SCAM)*. 2020. (Acceptance Ratio: 16/58 = 28%).

FSE '20 Tool Rehab El-Hajj and **Sarah Nadi**. "LibComp: An IntelliJ Plugin for Comparing Java Libraries". In: *Proceedings of the ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE '20)*. 2020, pp. 1591–1595. (Acceptance Ratio: 26/44 = 59%).

SANER '20 **Sarah Nadi** and Christoph Treude. "Essential Sentences for Navigating Stack Overflow". In: *Proceedings of the IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER '20)*. 2020, pp. 229–239. (Acceptance Ratio: 46/199 = 23%).

ICSME '20 Changyuan Lin, **Sarah Nadi**, and Hamzeh Khazaei. "A Large-scale Data Set and an Empirical Study of Docker Images Hosted on Docker Hub". In: *Proceedings of the 36th IEEE International Conference on Software Maintenance and Evolution (ICSME)*. 2020, pp. 371–381. (Acceptance Ratio: 58/201 = 29%).

MSR '19a Data Aida Radu and **Sarah Nadi**. "A Dataset of Non-Functional Bugs". In: *Proceedings of the 16th ACM International Conference on Mining Software Repositories (MSR) – Data Showcase Track*. 2019, pp. 399–403.

MSR '19b Tool Moein Owhadi-Kareshk and **Sarah Nadi**. "Scalable Software Merging Studies with MERGANSER". In: *Proceedings of the 16th ACM International Conference on Mining Software Repositories (MSR)*. 2019, pp. 560–564. (Acceptance Ratio: 15/44 = 34%).

ESEM '19 Moein Owhadi-Kareshk, **Sarah Nadi**, and Julia Rubin. "Predicting Merge Conflicts in Collaborative Software Development". In: *Proceedings of the ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM)*. 2019, pp. 1–11. (Acceptance Ratio: 23/116 = 20%).

SANER '19 Mehran Mahmoudi, **Sarah Nadi**, and Nikolaos Tsantalis. "Are Refactorings to Blame? An Empirical Study of Refactorings in Merge Conflicts". In: *Proceedings of the 26th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER)*. 2019. (Acceptance Ratio: 40/148 = 27%).

MSR '19c Sven Amann, Hoan Nguyen, **Sarah Nadi**, Tien Nguyen, and Mira Mezini. "Investigating Next-Steps in Static API-Misuse Detection". In: *Proceedings of the 16th ACM International Conference on Mining Software Repositories (MSR)*. 2019, pp. 265–275. (Acceptance Ratio: 32/126 = 25%).

MSR '19d Challenge Abhishek Soni and **Sarah Nadi**. "Analyzing Comment-induced Updates on Stack Overflow". In: *Proceedings of the 16th ACM International Conference on Mining Software Repositories (MSR) – Challenge Track*. 2019, pp. 220–224. (Acceptance Ratio: 14/27 = 52%).

PROMISE '18 Fernando Lopez de la Mora and **Sarah Nadi**. "An Empirical Study of Metric-based Comparisons of Software Libraries". In: *Proceedings of the 14th International Conference on Predictive Models and Data Analytics in Software Engineering (PROMISE)*. 2018. (Acceptance Ratio: 11/22 = 50%).

MSR '18 Mehran Mahmoudi and **Sarah Nadi**. "The Android Update Problem: An Empirical Study". In: *Proceedings of the 15th ACM International Conference on Mining Software Repositories (MSR)*. 2018, pp. 220–230. (Acceptance Ratio: 37/113 = 33%).

ICSE '18 NIER Fernando Lopez de la Mora and **Sarah Nadi**. "Which library should I use? A metric-based comparison of software libraries". In: *Proceedings of the 40th International Conference on Software Engineering New Ideas and Emerging Results Track (ICSE NIER)*. 2018, pp. 37–40. (Acceptance Ratio: 25/95 = 26%).

ICSOFT '18 Ervina Cergani, Sebastian Proksch, **Sarah Nadi**, and Mira Mezini. "Investigating Order Information in API-Usage Patterns: A Benchmark and Empirical Study." In: *Proceedings of the 13th International Conference on Software Technologies (ICSOFT)*. 2018, pp. 1–7.

SPLC '18 Industry Samer Al Masri, **Sarah Nadi**, Matthew Gaudet, Xiaoli Liang, and Robert W. Young. "Using Static Analysis to Support Variability Implementation Decisions in C++". In: *Proceedings of the 22nd International Systems and Software Product Line Conference (SPLC) – Industry Track*. 2018. (Acceptance Ratio: 9/18 = 50%).

ICSME '18 Industry John Businge, Openja Moses, **Sarah Nadi**, Engineer Bainomugisha, and Thorsten Berger. "Clone-Based Variability Management in the Android Ecosystem". In: *Proceedings of the 34th IEEE International Conference on Software Maintenance and Evolution (ICSME) – Industry Track*. 2018, pp. 625–634. (Acceptance Ratio: 15/32 = 47%).

GPCE '18 Larissa Rocha Soares, Jens Meinicke, **Sarah Nadi**, Christian Kästner, and Eduardo Santana de Almeida. "Exploring Feature Interactions Without Specifications: A Controlled Experiment". In: *Proceedings of the 17th ACM SIGPLAN International Conference on Generative Programming: Concepts and Experiences (GPCE)*. GPCE 2018. Boston, MA, USA: ACM, 2018, pp. 40–52. ISBN: 978-1-4503-6045-6. (Acceptance Ratio: 17/44 = 39%).

CASCON '17 Position Samer Al Masri, Nazim Uddin Bhuiyan, **Sarah Nadi**, and Matthew Gaudet. "Software Variability Through C++ Static Polymorphsim: A Case Study of Challenges and Open Problems in Eclipse OMR". In: *Proceedings of the 27th Annual International Conference on Computer Science and Software Engineering (CASCON) – Position Paper*. 2017, pp. 285–291. (Acceptance Ratio: 10/22 = 53%).

SANER '17 Sebastian Proksch, **Sarah Nadi**, Sven Amann, and Mira Mezini. "Enriching In-IDE Process Information with Fine-grained Source Code History". In: *Proceedings of the 24th IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER)*. 2017, pp. 250–260. (Acceptance Ratio: 34/140 = 24%).

ASE '17 Tool Stefan Krüger, **Sarah Nadi**, Michael Reif, Karim Ali, Mira Mezini, Eric Bodden, Florian Göpfert, Felix Günther, Christian Weinert, Daniel Demmler, and Ram Kamath. "CogniCrypt: Supporting Developers in using Cryptography". In: *Proceedings of the 32nd IEEE/ACM International Conference on Automated Software Engineering (ASE) – Tool Demo Track*. 2017, pp. 931–936.

ICPC '16 Tool Sven Amann, Sebastian Proksch, and **Sarah Nadi**. "FeedBaG: An Interaction Tracker for Visual Studio". In: *Proceedings of the 24th International Conference on Program Comprehension – Tool Track (ICPC)*. 2016.

MSR '16a Data Sebastian Proksch, Sven Amann, **Sarah Nadi**, and Mira Mezini. "A Dataset of Simplified Syntax Trees for C#". In: *Proceedings of the 13th ACM International Conference on Mining Software Repositories – Data Showcase Track (MSR)*. 2016, pp. 476–479.

SANER '16 Sven Amann, Sebastian Proksch, **Sarah Nadi**, and Mira Mezini. "A Study of Visual Studio Usage in Practice". In: *Proceedings of the 23rd IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER)*. 2016, pp. 124–134. (Acceptance Ratio: 52/140 = 37%).

ASE '16 Sebastian Proksch, Sven Amann, **Sarah Nadi**, and Mira Mezini. "Evaluating the Evaluations of Code Recommender Systems: A Reality Check". In: *Proceedings of the 31st IEEE/ACM International Conference on Automated Software Engineering (ASE)*. 2016, pp. 111–121. (Acceptance Ratio: 57/298 = 19%).

MSR '16b Data Sven Amann, **Sarah Nadi**, Hoan A. Nguyen, Tien N. Nguyen, and Mira Mezini. "MUBench: A Benchmark for API-Misuse Detectors". In: *Proceedings of the 13th International Conference on Mining Software Repositories – Data Showcase Track (MSR)*. 2016, pp. 464–467.

ICSE '16 **Sarah Nadi**, Stefan Krüger, Mira Mezini, and Eric Bodden. ""Jumping Through Hoops" Why do Java Developers Struggle with Cryptography APIs?" In: *Proceedings of the ACM/IEEE 38th International Conference on Software Engineering (ICSE)*. 2016, pp. 935–946. (Acceptance Ratio: 101/530 = 19%).

ONWARD! '15 Steven Arzt, **Sarah Nadi**, Karim Ali, Eric Bodden, Sebastian Erdweg, and Mira Mezini. "Towards Secure Integration of Cryptographic Software". In: *Proceedings of the 14th SIGPLAN Symposium on New Ideas in Programming and Reflections on Software at SPLASH (ONWARD)*. 2015, pp. 1–13. (Acceptance Ratio: 17/48 = 35%).

ECOOP '15 Flávio Medeiros, Christian Kästner, Márcio Ribeiro, **Sarah Nadi**, and Rohit Gheyi. "The Love/Hate Relationship with the C Preprocessor: An Interview Study". In: *Proceedings of the 29th European Conference on Object-Oriented Programming (ECOOP)*. 2015, pp. 495–518. (Acceptance Ratio: 31/136 = 23%).

ICSE '14 **Sarah Nadi**, Thorsten Berger, Christian Kästner, and Krzysztof Czarnecki. "Mining Configuration Constraints: Static Analyses and Empirical Results". In: *Proceedings of the 36th ACM/IEEE International Conference on Software Engineering (ICSE)*. 2014, pp. 140–151. (Acceptance Ratio: 99/495 = 20%).

ICSE '13 Doct. Symp. **Sarah Nadi**. "A Study of Variability Spaces in Open Source Software". In: *Proceedings of the 35th International Conference on Software Engineering (ICSE), Doctoral Symposium*. 2013, pp. 1353–1356.

MSR '13a **Sarah Nadi**, Christian Dietrich, Reinhard Tartler, Richard C. Holt, and Daniel Lohmann. "Linux Variability Anomalies: What Causes them and How do They Get Fixed?" In: *Proceedings of the 10th Working Conference on Mining Software Repositories (MSR)*. 2013, pp. 111–120. (Acceptance Ratio: 31/81 = 38%).

MSR '13b Hadi Hemmati, **Sarah Nadi**, Olga Baysal, Oleksii Kononenko, Wei Wang, Reid Holmes, and Michael W. Godfrey. "The MSR Cookbook: Mining a Decade of Research". In: *Proceedings of the 10th Working Conference on Mining Software Repositories (MSR)*. 2013, pp. 343–352. (Acceptance Ratio: 31/81 = 38%).

CSMR '12 **Sarah Nadi** and Richard C. Holt. "Mining Kbuild to Detect Variability Anomalies in Linux". In: *Proceedings of the 16th European Conference on Software Maintenance and Reengineering (CSMR)*. 2012, pp. 107–116. (Acceptance Ratio: 30/108 = 27%).

WCRE '11 **Sarah Nadi** and Richard C. Holt. "Make it or Break it: Mining Anomalies from Linux Kbuild". In: *Proceedings of the 18th Working Conference on Reverse Engineering (WCRE)*. 2011, pp. 315–324. (Acceptance Ratio: 27/104 = 26%).

CSMR '10 **Sarah Nadi**, Richard C. Holt, and Serge Mankovskii. "Does the Past Say it All? Using History to Predict Change Sets in a CMDB". In: *Proceedings of the 14th European Conference on Software Maintenance and Reengineering (CSMR)*. 2010, pp. 97–106. (Acceptance Ratio: 21/80 = 26%).

CASCON '09 Best paper **Sarah Nadi**, Richard C. Holt, Ian Davis, and Serge Mankovskii. "DRACA: Decision Support for Root Cause Analysis and Change Impact Analysis for CMDBs". In: *Proceedings of the 2009 Conference of the Center for Advanced Studies on Collaborative Research (CASCON)*. 2009, pp. 1–11. (Acceptance Ratio: 22/88 = 25%).

Refereed Workshop Papers

VaMoS '18 Workshop — Larissa Rocha Soares, Jens Meinicke, **Sarah Nadi**, Christian Kästner, and Eduardo Santana de Almeida. "VarXplorer: Lightweight Process for Dynamic Inspection of Feature Interactions". In: *Proceedings of the 12nd International Workshop on Variability Modelling of Software-Intensive Systems (VaMoS)*. 2018, pp. 59–66.

SWAN '16 Workshop — Ervina Cergani, Sebastian Proksch, **Sarah Nadi**, and Mira Mezini. "Addressing Scalability in API Method Call Analytics". In: *2nd International Workshop on Software Analytics (SWAN)*. 2016.

VaMoS '16 Workshop — **Sarah Nadi** and Stefan Krüger. "Variability Modeling of Cryptographic Components (Clafer Experience Report)". In: *Proceedings of the 10th International Workshop on Variability Modeling of Software-intensive Systems (VaMoS)*. 2016, pp. 105–112.

SE '15 Long Abstract — Thorsten Berger and **Sarah Nadi**. "Variability Models in Large-scale Systems: A Study and a Reverse-engineering Technique". In: *Proceedings of the German Software Engineering Conference (SE)*. 2015.

RELENG '15 Workshop — Shuirui Zhou, Jafar Al-Kofahi, Tien N. Nguyen, Christian Kästner, and **Sarah Nadi**. "Extracting Configuration Knowledge from Build Files with Symbolic Analysis". In: *Proceedings of the 3rd International Workshop on Release Engineering (RELENG)*. 2015.

Teaching

CS-UH-3260 — **Modern Software Development Practices**, NYUAD (Spring 24).

CMPUT 402 — **Software Quality**, UofA (W19, W20, W21. W22).

CMPUT 663 — **Software Analytics**, UofA (F19, F21).

CMPUT 201 — **Practical Programming Methodology**, UofA (W17, W18, W19, W21).

Dir. Studies — **Miscellaneous Topics**, UofA (W17, W18, F18, F19, F20, F21, F23).

CMPUT 663 — **Software Maintenance and Reuse**, UofA (F17).

CMPUT 663 — **Software Product Lines: Implementation, Analysis, & Maintenance**, UofA (F16).

Seminar — **Software Product Lines Seminar**, TU Darmstadt (W15).

Research Funding

UofA — **Faculty of Science Research Support for Canada Research Chair (CRC)** ($350,000, 2017 - 2027)

IBM CAS — **IBM CAS Grant** "Language Feature Migration" ($90,000 as Co-PI with Karim Ali, 2022 - 2025)

CREATE — **A Training Program on the Development, Deployment and Servicing of Artificial Intelligence-based Software Systems** ($1.6M, 2021-2027. Co-PI. NSERC CREATE grant led by Emad Shihab, Concordia University)

NSERC — **NSERC Discovery Grant**, "Mining software repositories to infer software product line migration strategies" ($196,000, 2017 - 2024)

CRC — **Research stipend from Canada Research Chairs (CRC) Program** ($90,000, 2018 - 2022)

Samsung — **Samsung GRO Project** "Mining Version Histories to Automate Merge-conflict Resolutions" (USD $70,000 as Co-PI with Julia Rubin from UBC, 2017 - 2019)

IBM CAS — **IBM CAS Grant, "Variability aware analysis of C++ code"** ($90,000, 2017 - 2021)

UofA — **Faculty of Science Startup** ($92,000, 2016 - 2020)

Invited Talks, Seminars, and Panels

Talk **It's not you, it's the API: Automatically avoiding API misuses**, It Will Never Work In Theory, Strange Loop 2022. Talk available at `https://www.youtube.com/watch?v=KqhvZ4xTnhQ`

Keynote **Challenges & Opportunities in Supporting Software Maintenance & Reuse**, 9th Workshop on Software Visualization, Evolution and Maintenance (VEM 2021)

Keynote **Navigating your PhD & the World Beyond**, ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE '21)

Talk **Preparing a Strong Grad School Application**, ICSE 2020 Student Mentoring Workshop (SMeW). Talk available at `https://www.youtube.com/watch?v=B3oANa67Iq4&t=1250s`

Seminar **Automated Support for Software Maintenance & Reuse**, University of British Columbia. 2020

Keynote **Navigating your PhD & the World Beyond**, Doctoral Symposium, IEEE/ACM International Conference on Automated Software Engineering (ASE 2019)

Panelist **Reviewer Experience Panel**, Celebration of ASE, IEEE/ACM International Conference on Automated Software Engineering (ASE 2019)

Panelist **Panel for Mentoring of Faculty and Graduate Students**, ACM Canadian Celebration of Women in Computing (CAN-CWiC 2019)

Panelist **Panel of Recent PhDs**, ICSE 2019 Student Mentoring Workshop (SMeW)

Panelist **Panel of Recent PhDs**, SPLASH 2018 Programming Languages Mentoring Workshop (PLMW)

Talk **What Lies Beyond a PhD**, Doctoral Symposium, European Conference on Object-Oriented Programming (ECOOP 2017)

Seminar **From the Linux Kernel to Cryptography APIs: Supporting and Leveraging Software Product Lines**. University of Alabama, University of Houston, University of Alberta, Concordia University, Rochester Institute of Technology, Iowa State University, University of Colorado Boulder, Colorado State University, George Mason University, and McGill University. 2016.

Seminar **Towards Configurable Security: Bridging the Gap Between Application Developers and Cryptography Experts**, University of Alberta. 2015

Seminar **Variability is the Law of Life: Extracting Configuration Constraints and Detecting Variability Anomalies**, University of Lethbridge and McGill University. 2015

Invitation-only Events

IFIP 2.4 Working Group of The International Federation for Information Processing (IFIP), Virtual. 2020, 2021, 2023

DysDoc International Workshop on Dynamic Software Documentation (DysDoc), McGill University's Bellairs Research Institute. Invitation-only workshop organized by Martin Robillard. 2018, 2019, 2020

Dagstuhl Software Evolution in Time and Space: Unifying Version and Variability Management, Dagstuhl Seminar organized by Thorsten Berger, Marsha Checkik, Timo Kehrer, and Manual Wimmer. 2019

Dagstuhl Automatic Quality Assurance and Release, Dagstuhl Seminar organized by Bram Adams, Benoit Baudry, Sigrid Eldh, and Andy Zaidman. 2018

Service

Organizing Committee Member

ICSE '25   **Software Analytics Area Co-chair**, 47th International Conference on Software Engineering

ICSME '24   **Program Committee Co-chair**, IEEE International Conference on Software Maintenance and Evolution (ICSME '24)

FSE '23   **Workshops Co-Chair**, ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE '23).

ICSE '23   **Demonstrations Track Co-Chair**, 45th International Conference on Software Engineering.

MSR '22   **Shadow PC Co-Chair**, 19th International Conference on Mining Software Repositories.

SANER '21   **Early Research Achievements Track Co-Chair**, 28th IEEE International Conference on Software Analysis, Evolution, and Reengineering.

MSR '20   **Program Committee Co-chair**, 17th ACM International Conference on Mining Software Repositories.

SPLC '20   **Program Committee Co-chair**, 24th International Systems and Software Product Line Conference.

ASE '19   **Workshops Track Co-chair**, 34th IEEE/ACM International Conference on Automated Software Engineering.

ICSE '19   **Social Media Co-chair**, 41st IEEE/ACM International Conference on Software Engineering.

PLMW '18   **Co-organizer**, Programming Languages Mentoring Workshop (PLMW), SPLASH '18 edition.

SPLC '18   **Challenge Track Co-chair**, 22nd International Systems and Software Product Line Conference.

MSR '18   **Challenge Track co-chair & Data track co-chair**, 15th ACM International Conference on Mining Software Repositories.

WAPI '18   **Co-organizer**, 2nd International Workshop on API Usage and Evolution, co-located with ICSE '18.

WAPI '17   **Main Organizer**, 1st International Workshop on API Usage and Evolution, co-located with ICSE '17.

SANER '17   **Poster Session Co-Chair**, 24th IEEE International Conference on Software Analysis, Evolution, and Reengineering.

CSER '17   **Organizing Co-Chair**, Spring 2017 Consortium of Software Engineering Research (CSER) meeting.

Program Committee Member

ICSE   ACM/IEEE International Conference on Software Engineering: 2019, 2021, 2022, 2024.

FSE   ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE). 2021 (Industry Track), 2023

OOPSLA   ACM international conference on Object Oriented Programming Systems Languages and Applications: 2017, 2021 (External Review Member), 2023.

DREE   1st International Workshop on Designing and Running Project-Based Courses in Software Engineering Education, co-located with ICSE: 2022

ICSME   IEEE International Conference on Software Maintenance and Evolution: 2017, 2021.

ECCOP/ISSTA   European Conference on Object-oriented programming (ECOOP) and ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA). 2021 (Joint Doctoral Symposium)

ASE	ACM/IEEE International Conference on Automated Software Engineering: 2017, 2018, 2019.
MSR	ACM/IEEE International Conference on Mining Software Repositories: 2014 (Challenge Track), 2016 (Challenge Track), 2017, 2018, 2019 (Challenge Track).
VaMoS	International Workshop on Variability Modelling of Software-intensive Systems: 2017, 2018, 2019.
GPCE	International Conference on Generative Programming: Concepts & Experiences: 2017, 2018.
SPLC	International Systems and Software Product Line Conference: 2017.
ICPC	IEEE/ACM International Conference on Program Comprehension 2018: 2017 (Tool Demo Track).
SANER	IEEE International Conference on Software Analysis, Evolution and Reengineering: 2017 (Early Research Achievements Track).
SWAN	International Workshop on Software Analytics: 2016.
CSED	International Workshop on Continuous Software Evolution and Delivery: 2016.
MODULARITY	International Conference on Modularity: 2016 (Visions Track).
RELENG	International Workshop on Release Engineering: 2013, 2014, 2015.

Reviewer

NSERC	NSERC Discovery Grant Program (2018-2022).
TSE	IEEE Transactions on Software Engineering (2016-2022).
EMSE	Empirical Software Engineering Journal (2017, 2019-2022).
IEEE SW	IEEE Software (2016).
CompJournal	The Computer Journal (2015).
JSS	Journal of Systems and Software (2015).
IEEE SWSI	IEEE Software Special Issue on Release Engineering (2014).

Editorial Team Member

EMSE	**Associate Editor**, Empirical Software Engineering Journal, 2019 - current.
IEEE S/W	**Associate Editor**, IEEE Software Magazine Blog, 2016-2018.

Steering Committees

SANER	**Steering Committee Member**, IEEE International Conference on Software Analysis, Evolution and Reengineering, 2020 - 2022.
MSR	**Steering Committee Member**, ACM/IEEE International Conference on Mining Software Repositories (MSR), 2019 - 2021.

Departmental

EDI	**Committee Chair**, Equity, Diversity, and Inclusion Committee, Department of Computing Science, UofA, 2020 - 2022.
NSERC	**NSERC scholarship adviser**, Department of Computing Science, UofA, 2019 - 2022.
Admissions	**Admissions committee member**, Department of Computing Science, UofA, 2017 - 2022.

Mentoring & Outreach Activities

UA-WISE/WiSER	**Mentor**, University of Alberta Women in Science & Engineering Mentorship Program, 2020/2021.

UA-WISE **Keynote speaker**, University of Alberta Women in Science & Engineering Black Tie Event, 2019.

Technovation **Mentor**, Technovation Edmonton 2018.

Ada's Team **Panelist**, Diversity Panel, Ada's Team at UofA, 2017.