

Zohreh Sharafi

Computer and Software Engineering
Polytechnique Montréal
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Academic Positions

02/2022 – Present **Polytechnique Montréal**
Montréal, Canada Assistant Professor, Computer and Software Engineering

Academic Preparation

01/2019 – 01/2021 **University of Michigan**
Ann Arbor, USA Senior Research Fellow & Intermittent Lecturer, Computer Science and Engineering
Mentor: Dr. Westley Weimer

09/2010 – 05/2015 **Université de Montréal, Polytechnique Montréal**
Montréal, Canada PhD in Computer Engineering ([thesis T.2 below](#))
Advisors: Dr. Giuliano Antoniol and Dr. Yann-Gaël Guéhéneuc
Committees: Dr. Margaret-Anne Storey, Dr. Pierre Robillard, Dr. Giuliano Antoniol,
Dr. Yann-Gaël Guéhéneuc, and Dr. Gabriela Nicolescu (chair)

09/2008 – 09/2010 **Concordia University**
Montréal, Canada MAsc in Software Engineering ([thesis T.1 below](#))
Advisor: Dr. Constantinos Constantinides

09/2004 – 02/2008 **College of Engineering, University of Tehran**
Tehran, Iran B.Sc. in Computer Engineering

Awards & Achievements

05/2024 **Natural Sciences and Engineering Research Council of Canada (NSERC)**
Discovery Grant and Supplements

02/2022 **The Institute for Data Valorization (IVADO) Startup Operation Fund**
\$80,000 for two years

01/2019 **Natural Sciences and Engineering Research Council of Canada (NSERC) Postdoctoral Fellowship**
Annual stipend of \$45,000 for two years
Awarded to 180 candidates nationwide across all science and engineering disciplines

- 09/2012 **Fonds de Recherche du Quebec-Nature et Technologies (FQRNT) Scholarship for Doctoral Study**
Annual stipend of \$21,000 for two years
Awarded to 143 candidates provincewide across all science and engineering disciplines
- 10/2010 **Polytechnique Montréal Ph.D. Admission Fellowship**
- 09/2009 **Concordia University International Tuition Fee Remission Award**

Publications

Accepted Peer-reviewed Journal Articles

- J.6 **Sharafi, Z.**, Huang, Y., Leach, K., and Weimer, W., 2021. Towards an objective measure of developers' cognitive activities. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 30(3), pp. 1–40. (5.0 journal impact factor)
🌐 <https://doi.org/10.1145/3434643>
- J.5 **Sharafi, Z.**, Bertram, I., Flanagan, M., and Weimer, W., 2020. Eyes on code: a study on developers' code navigation strategies. *IEEE Transactions on Software Engineering (TSE)*, pp. 1–13. (6.7 journal impact factor)
🌐 <https://doi.org/10.1109/TSE.2020.3032064>
- J.4 **Sharafi, Z.**, Sharif, B., Guéhéneuc, Y.G., Begel, A., Bednarik, R., and Crosby, M., 2020. A practical guide on conducting eye-tracking studies in software engineering. *Empirical Software Engineering (EMSE)*, pp. 1–47. (4.457 journal impact factor)
🌐 <https://doi.org/10.1007/s10664-020-09829-4>
- J.3 **Sharafi, Z.**, Soh, Z. and Guéhéneuc, Y.G., 2015. A systematic literature review on the usage of eye-tracking in software engineering. *Information and Software Technology (IST)*, 67, pp. 79–107. (2.921 journal impact factor)
🌐 <https://doi.org/10.1016/j.infsof.2015.06.008>
- J.2 Ali, N., **Sharafi, Z.**, Guéhéneuc, Y.G., and Antoniol, G., 2015. An empirical study on the importance of source code entities for requirements traceability. *Empirical Software Engineering (EMSE)*, 20(2), pp. 442–478. (4.457 journal impact factor)
🌐 <https://doi.org/10.1007/s10664-014-9315-y>
- J.1 De Smet, B., Lempereur, L., **Sharafi, Z.**, Guéhéneuc, Y.G., Antoniol, G. and Habra, SCP N., 2014. Taupe: visualizing and analyzing eye-tracking data. *Science of Computer Programming (SCP)*, 79, pp. 260–278. (1.088 journal impact factor)
🌐 <https://doi.org/10.1016/j.scico.2012.01.004>

Accepted Refereed Conference Articles

- C.12 Njoku, A., Amini, M., and **Sharafi, Z.**, 2024. Innovating Coding: Evaluating the Impact of Innovative Thinking in Programming. In *Proceedings of the 32nd IEEE/ACM International Conference on Program Comprehension (ICPC)*, pp. 241–245. (28% acceptance rate)
🌐 <https://doi.org/10.1145/3643916.3644397>
- C.11 Amini, M., Olson, J., and **Sharafi, Z.**, 2024. Coding with a Creative Twist: Investigating the Link Between Creativity Scores and problem-solving Strategies. In *Proceedings of the 2024 ACM/IEEE 44th International Conference on Software Engineering: New Ideas and Emerging Results (ICSE-NIER)*, pp. 21–25.
🌐 <https://doi.org/10.1145/3639476.3639766>

- C.10 Yabesi, S., Amini, M., Ristic, J., and **Sharafi, Z.**, 2024. Exploring the Effects of Urgency and Reputation in Code Review: An Eye-Tracking Study. In *Proceedings of the 32nd IEEE/ACM International Conference on Program Comprehension (ICPC)*, pp. 202–213. (36% acceptance rate)
🌐 <https://doi.org/10.1145/3643916.3644425>
- C.9 Bertram, I., Hong, J., Huang, Y., Weimer, W., and **Sharafi, Z.**, 2020. Trustworthiness perceptions in code review: An eye-tracking study. In *14th ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM) – Emerging results*, pp. 1–6. (29% acceptance rate)
🌐 <https://doi.org/10.1145/3382494.3422164>
- C.8 Huang, Y., Leach, K., **Sharafi, Z.**, McKay, N., Santander, Y., and Weimer, W., 2020. Investigating gender bias and differences in code review using medical imaging and eye-tracking. In *ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)*, pp. 456–468. (28% acceptance rate)
🌐 <https://doi.org/10.1145/3368089.3409681>
- C.7 **Sharafi, Z.**, Shaffer, T., Sharif, B. and Guéhéneuc, Y.G., 2015. Eye-tracking metrics in software engineering. In *IEEE Asia-Pacific Software Engineering Conference (APSEC)*, pp. 96–103. (27% acceptance rate)
🌐 <https://doi.org/10.1109/APSEC.2015.53>
- C.6 **Sharafi, Z.**, Marchetto, A., Susi, A., Antoniol, G. and Guéhéneuc, Y.G., 2013. An empirical study on the efficiency of graphical vs. textual representations in requirements comprehension. In *21st IEEE International Conference on Program Comprehension (ICPC)*, pp. 33–42. (24% acceptance rate)
🌐 <https://doi.org/10.1109/ICPC.2013.6613831>
- C.5 Ali, N., **Sharafi, Z.**, Guéhéneuc, Y.G. and Antoniol, G., 2012. An empirical study on requirements traceability using eye-tracking. In *28th IEEE International Conference on Software Maintenance (ICSM)*, pp. 191–200. (25% acceptance rate)
🌐 <https://doi.org/10.1109/ICSM.2012.6405271>
- C.4 Soh, Z., **Sharafi, Z.**, Van den Plas, B., Porras, G.C., Guéhéneuc, Y.G. and Antoniol, G., 2012. Professional status and expertise for UML class diagram comprehension: An empirical study. In *20th IEEE International Conference on Program Comprehension (ICPC)*, pp. 163–172. (25% acceptance rate)
🌐 <https://doi.org/10.1109/ICPC.2012.6240484>
- C.3 **Sharafi, Z.**, Soh, Z., Guéhéneuc, Y.G. and Antoniol, G., 2012. Women and men—Different but equal: On the impact of identifier style on source code reading. In *20th IEEE International Conference on Program Comprehension (ICPC)*, pp. 27–36. (25% acceptance rate)
🌐 <https://doi.org/10.1109/ICPC.2012.6240505>

C.2 **Sharafi, Z.**, Mirshams, P., Hamou-Lhadj, A. and Constantinides, C., 2010. Extending the UML metamodel to provide support for crosscutting concerns. In *8th IEEE ACIS International Conference on Software Engineering Research, Management and Applications*, pp. 149–157. (27% acceptance rate)
🌐 <https://doi.org/10.1109/SERA.2010.28>

C.1 Gheissari, N., Kamali, M., Mirshams, P. and **Sharafi, Z.**, 2008. Model Based Global Image Registration. In *3rd International Conference on Computer Vision Theory and Applications (VISAPP)*, pp. 440–445. (38% acceptance rate)

Accepted Refereed Workshop & Doctoral Consortium

W.1 Sharafi, Z., 2011. A systematic analysis of software architecture visualization techniques. In *19th IEEE International Conference on Program Comprehension – PhD Symposium* pp. 254–257. IEEE. (24% acceptance rate)
🌐 <https://doi.org/10.1109/ICPC.2011.40>

Theses

- T.2 **Sharafi, Z.**, 2015. On the Influence of Representation Type and Gender on Recognition Tasks of Program Comprehension. *Doctoral dissertation, École Polytechnique de Montréal*, Montréal, Canada, August. 📄 PDF
- T.1 **Sharafi, Z.**, 2010. A platform-independent AOP patterns to support model transformations. *Master of Applied Science dissertation, Concordia University*, Montréal, Canada, August. 📄 PDF

Teaching

- 09/2022 – 12/2024
Polytechnique Montréal **Lecturer**
LOG8430E: Advanced Software Architecture
4 credit, upper-level course focusing on understanding of advanced software design and architecture.
45 and 55 students enrolled in Fall 2022 and 2023 respectively.
📄 <https://moodle.polymtl.ca/enrol/index.php?id=1766>
- 09/2022 – 12/2024
Polytechnique Montréal **Lecturer**
LOG6307E: Release Eng. App. Mining Software Repositories
4 credit, upper-level graduate course focusing on software release engineering process and mining software repositories research.
6 and 10 students enrolled in Fall 2022 and 2023 respectively.
📄 <https://moodle.polymtl.ca/enrol/index.php?id=2678>
- 09/2019 – 12/2019
University of Michigan **Intermittent Lecturer**
EECS 183: Elementary Programming Concepts
4 credit, entry-level course focusing on fundamental concepts and skills of programming in a high-level language
Taught 1 lecture section (Section 01). Out of 1030 students enrolled, 232 enrolled in Section 01. Median Evaluation: 4.42/5. Adapted and edited lectures. Designed and oversaw grading for one exam for all lecture sections. Developed one of the two exams for all lecture sections. Held office hours weekly. Co-managed 35 TAs.
- 01/2018 – 04/2018
Code Club Canada **Instructor**
Programming Concepts with Scratch
Ran free coding clubs class for children aged 8-12. One section per week.

Research Students Supervised

Graduate

- 09/2022 – Present
Polytechnique Montréal **Mahta Amini - PhD Candidate**
Studying the role of creativity in SE tasks (Accepted Papers C.12, C.11, & C.10).
- 01/2024 – Present
Polytechnique Montréal **Cameron Cherif - PhD Student**
TBA

- 09/2022 – Present **Sara Yabesi - Master's Student**
Polytechnique Montréal Studying the role of creativity in SE tasks (Accepted Papers C.10).
- 09/2023 – 2024 **Anthonia Njoku - Graduate Research Intern. Master's Student at AIMS-Cameroon**
Polytechnique Montréal Application of machine learning in studying developers problem-solving strategies: a review of methods, performance, and challenges (Accepted Papers C.12).

Undergraduate

- 05/2019 – 05/2020 **Ian Bertram, Undergraduate Independent Study with Prof. Westley Weimer**
University of Michigan Supervised Ian's work on proposing a new experimental setup to record developers' eye-gaze data in a realistic setup in which scrolling and editing are supported. Resulting in two accepted papers (Papers C.9 & J.5).
- 05/2019 – 12/2019 **Michael Flanagan, Undergraduate Independent Study with Prof. Westley Weimer**
University of Michigan Supervised Michael's work on investigating and applying various scan path visualization and comparison methods. Resulting in one accepted paper (Paper J.5).
- 05/2019 – 12/2019 **Nicholas McKay, Undergraduate Independent Study with Prof. Westley Weimer and Dr. Kevin Leach**
University of Michigan Supervised Nick's work on conducting an fMRI study on investigating gender bias and differences in code review. Resulting in one accepted paper (Paper C.8).
- 01/2020 – 09/2020 **Jack Huang, Undergraduate Independent Study with Prof. Westley Weimer**
University of Michigan Supervised Jack's work on supporting developers' workflow of scrolling and changing tabs on the browser while performing code search tasks. Resulting in one accepted paper (Paper C.9).

Professional Experience

- 01/2019 – Now **Computer Science and Engineering Department, University of Michigan, Ann Arbor, MI Senior Research Fellow & Intermittent Lecturer**
Studying the cognitive processes and human factors involved in software engineering activities. Teaching computer science classes and supervising undergraduate researchers.
- 11/2015 – 12/2018 **Morgan Stanley (Listed Sales & Trading Team), Technology Associate**
Montréal, Canada Contributed to the development of the firm's lead electronic-trading application for listed securities. Developed a stock market data simulator to improve the debugging process and performance testing of multi-threaded, high-touch trading applications.
- 08/2015 – 11/2015 **Morgan Stanley, Technology Analyst**
New York, USA Participated in a 15-week, intensive, global training program. Developed and released to production a fully automated reporting system for investment applications.
- 09/2006 – 01/2008 **Computer Vision Group, Institute for research in Physics and Mathematics (IPM), Research Intern**
Tehran, Iran Developed an image transformation technique for making panoramic images. Our findings and results were published (Paper C.1).

Service

Organizing Committees

- 2025 Local Arrangement Co-chair - the Mining Software Repositories Conference - MSR 2025
- 2025 Registration Co-chair - The IEEE International Conference on Software Analysis, Evolution and Reengineering - SANER 2025
- 2024 Program Co-chair - The Software Engineering for Machine Learning Applications (SEMLA) international symposium - SEMLA 2024
- 2023 Tool Demo Track Co-chair - 31st IEEE/ACM International Conference on Program Comprehension - ICPC 2023
- 2023 Organizer Committee - The Software Engineering for Machine Learning Applications (SEMLA) international symposium - SEMLA 2023

Program Committees

- 2024 The ACM International Conference on the Foundations of Software Engineering - Research Track - FSE 2025
- 2024 The ACM Symposium on Eye Tracking Research Applications (ETRA) - Research Track - ETRA 2024
- 2024 The ACM International Conference on the Foundations of Software Engineering - Demo Track - FSE 2024
 - ☆ Winner of the *Distinguished Reviewer Award*
- 2024 The 12th International Workshop on Eye Movements in Programming - EMIP 2024
- 2023 The 11th International Workshop on Eye Movements in Programming - EMIP 2023
- 2020 IEEE International Conference on Program Comprehension - Research Track
 - ☆ Winner of the *Distinguished Reviewer Award*
- 2014 IEEE International Conference on Program Comprehension - Early Research Track
- 2017 IEEE International Conference on Software Maintenance and Evolution - NIER Track

Peer Reviewing

- 2024 IEEE Transactions on Software Engineering (TSE)
- 2023 & 2024 IEEE Transactions on Human-Machine Systems (THMS)
- 2019 Elsevier - Information and Software Technology Journal
- 2018 Springer - Empirical Software Engineering Journal
- 2016 Journal of Eye Movement Research

References

Dr. Westley Weimer

Full Professor

Department of Computer Science and Engineering

University of Michigan, Ann Arbor, USA

Website: <https://web.eecs.umich.edu/~weimerw/>

Email: weimerw@umich.edu

Dr. William Arthur

Lecturer IV

Department of Computer Science and Engineering

University of Michigan, Ann Arbor, USA

Website: <https://web.eecs.umich.edu/~warthur/>

Email: warthur@umich.edu

Dr. Giuliano Antoniol

Full Professor

Département de Génie Informatique et Génie Logiciel

École Polytechnique de Montréal, Montréal, Canada

Website: <https://www.antoniol.net/>

Email: antoniol@ieee.org

Dr. Yann-Gaël Guéhéneuc

Full Professor

Department of Computer Science and Software Engineering, Montréal, Canada

Concordia University

Website: <http://www.ptidej.net/Members/guehenyg>

Email: yann-gael.gueheneuc@concordia.ca