Caroline Lemieux

✉ clemieux@cs.ubc.ca   🐦 @cestlemieux   🌐 https://www.carolemieux.com

Education

University of California, Berkeley   *2016-2021*
Ph.D. in Computer Science
Dissertation: Expanding the Reach of Fuzz Testing, Advisor: Koushik Sen

University of British Columbia   *2012-2016*
B.Sc. in Combined Honours Computer Science and Mathematics
Graduated with highest standing in Faculty of Science (Governor General's Silver Medal)

Areas of specialization

software engineering, fuzz testing, program synthesis, specification mining

Employment

Assistant Professor, University of British Columbia   *2022-Present*
Department of Computer Science

Postdoc Researcher, Microsoft Research   *2021-2022*
Worked at the intersection of PL/SE and ML at the NYC lab.

Graduate Student Researcher   *2016-2021*
Worked with Koushik Sen at UC Berkeley, on fuzz testing and program synthesis.

Google Software Engineering Intern   *2018*
Hosted by Stefan Bucur, built a static analysis tool to automatically generate fuzz targets.

Microsoft Research Intern   *2017*
Worked in the CloudBuild team on automated detection of build error anomalies.

Selected Awards and Scholarships

Google Research Scholar Award, Software engineering and programming languages	**2023**
Google PhD Fellowship in Programming Technology and Software Engineering	**2019**
Demetri Angelakos Memorial Achievement Award (for service to fellow students)	**2019**
Berkeley Fellowship for Graduate Study	**2016**

Selected Publications

[1] pdf   <u>Caroline Lemieux</u>, Jeevana Priya Inala, Shuvendu K. Lahiri, Siddhartha Sen. *Quickly Generating Diverse Valid Test Inputs with Reinforcement Learning.* In Proceedings of the 45th International Conference on Software Engineering, May 2023.

[2] pdf   Neil Kulkarni*, <u>Caroline Lemieux*</u>, Koushik Sen. *Learning Highly Recursive Input Grammars.* In Proceedings of the 36th International Conference on Automated Software Engineering (ASE), November 2021. *(* = Equal Contribution)*

[3] pdf   Rohan Bavishi, <u>Caroline Lemieux</u>, Koushik Sen, Ion Stoica. *Gauss: Program Synthesis by Reasoning over Graphs.* In PACMPL, Volume 5, Issue OOPSLA, October 2021.

[4] pdf   Sameer Reddy, <u>Caroline Lemieux</u>, Rohan Padhye, Koushik Sen. *Quickly Generating Diverse Valid Test Inputs with Reinforcement Learning.* In Proceedings of the 42nd International Conference on Software Engineering, July 2020.

[5]
pdf
Rohan Bavishi, <u>Caroline Lemieux</u>, Roy Fox, Koushik Sen, Ion Stoica. *AutoPandas: Neural-Backed Generators for Program Synthesis.* In PACMPL, Volume 3, Issue OOPSLA, October 2019.

[6]
pdf
Rohan Padhye, <u>Caroline Lemieux</u>, Koushik Sen, Laurent Simon, Hayawardh Vijayakumar. *FuzzFactory: Domain-Specific Fuzzing with Waypoints.* In PACMPL, Volume 3, Issue OOPSLA, October 2019.

[7]
pdf
Domagoj Babic, Stefan Bucur, Yaohui Chen, Franjo Ivancic, Tim King, Markus Kusano, <u>Caroline Lemieux</u>, Lászó Szekeres, Wei Wang. *FUDGE: Fuzz Driver Generation at Scale.* In Proceedings of the 2019 27th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering, August 2019. Industry Track. **Best Paper Award, Industry Track**

[8]
pdf
Rohan Padhye, <u>Caroline Lemieux</u>, Koushik Sen, Mike Papadakis, Yves Le Traon. *Semantic Fuzzing with Zest.* In Proceedings of the 28th International Symposium on Software Testing and Analysis, July 2019. **Distinguished Artifact Award**.

[9]
pdf
Rohan Padhye, <u>Caroline Lemieux</u>, Koushik Sen. *JQF: Coverage-Guided Property-Based Testing in Java.* In Proceedings of the 28th International Symposium on Software Testing and Analysis, July 2019. Tool demo. **Best Tool Demonstration Award**.

[10]
pdf
<u>Caroline Lemieux</u>, Koushik Sen. *FairFuzz: A Targeted Mutation Strategy for Increasing Greybox Fuzz Testing Coverage.* In Proceedings of the 33rd International Conference on Automated Software Engineering (ASE), September 2018.

[11]
pdf
<u>Caroline Lemieux</u>, Rohan Padhye, Koushik Sen, Dawn Song. *PerfFuzz: Automatically Generating Pathological Inputs.* In Proceedings of the 27th International Symposium on Software Testing and Analysis, July 2018. **Distinguished Paper Award.**

[12]
pdf
<u>Caroline Lemieux</u>, Dennis Park, Ivan Beschastnikh. *General LTL Specification Mining.* In Proceedings of the 30th International Conference on Automated Software Engineering (ASE), November 2015.

Recent Service

FUZZING'24 Program Committee	*2024*
ESEC/FSE 2023 Student Research Competition Co-Chair	*2023*
ICSE 2024 Program Committee	*2023*
ISSTA 2023 Program Committee	*2022-2023*
Reviewer, IEEE TSE (Transactions on Software Engineering)	*2019-2023*
Reviewer, ACM TOSEM (Transac. on Software Engineering and Methodology)	*2021-2022*
ASE 2022 Review Process Co-Chair	*2022*
ESEC/FSE 2022 Diversity & Inclusion and Hybridization Co-Chair	*2022*
FUZZING'22 Program Committee	*2022*
ISSTA 2022 Program Committee	*2022*
PLDI 2022 Program Committee	*2021-2022*
Distinguished Reviewer Award	
ASPLOS 2021 External Review Committee	*2020*
OOPSLA 2020 Artifact Evaluation Committee	*2020*
Distinguished Artifact Reviewer Award	