Paulette Koronkevich

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Education

Current **University of British Columbia**, Vancouver, BC, Canada
Software Practices Lab
PhD in Computer Science

August 2021 **University of British Columbia**, Vancouver, BC, Canada
Software Practices Lab
MSc in Computer Science

May 2019 **Indiana University**, Bloomington, Indiana, USA
School of Informatics, Computing, and Engineering
Bachelor's of Science in Computer Science
MINORS: Mathematics, Slavic Studies

Thesis

2021 *ANF Preserves Dependent Types up to Extensional Equality*
Paulette Koronkevich
UBC Electronic Theses and Dissertations (ETDs) 2008+
DOI

Publications

2025 *Type Universes as Kripke Worlds*
Paulette Koronkevich, William J. Bowman
International Conference on Functional Programming (ICFP)
DOI

2025 *Type-Preserving Flat Closure Optimization*
Adam T. Geller, Sean Bocirnea, Chester Gould, **Paulette Koronkevich**, William
J. Bowman
Object-oriented Programming, Systems, Languages and Applications (OOPSLA)
DOI

2022 *ANF Preserves Dependent Types up to Extensional Equality*
Paulette Koronkevich, Ramon Rakow, Amal Ahmed, William J. Bowman
Journal of Functional Programming
DOI

2021 *PLIERS: A Process that Integrates User-Centered Methods into Programming Language Design*

Michael Coblenz, Gauri Kambhatla, **Paulette Koronkevich**, Jenna L. Wise, Celeste Barnaby, Joshua Sunshine, Jonathan Aldrich, and Brad A. Myers.
ACM Transactions on Computer-Human Interaction (TOCHI) 2021
ACM DL

2020   *Obsidian: Typestate and Assets for Safer Blockchain Programming*
Michael Coblenz, Reed Oei, Tyler Etzel, **Paulette Koronkevich**, Miles Baker, Yannick Bloem, Brad A. Myers, Joshua Sunshine, and Jonathan Aldrich.
ACM Transactions on Programming Languages and Systems (TOPLAS) 2020
ACM DL

Honors & Awards

May 2023   Student Community Building Award & Graduate Teaching Assistant Award

Dec 2023   Faculty of Science Service Award

May 2022   Maria Klawe Service Award & Graduate Teaching Assistant Award

May 2021   Student Service Award

2022   Second place at Principles of Programming Languages (POPL 2022) Student Research Competition

2019-2021   UBC CS Merit Scholarship

2019   NSF Graduate Research Fellowship
unable to receive funding at Canadian institution, however.

2015-2019   Indiana University Cox Scholarship
given to ~40 incoming IU students for high academic performance along with a part-time job, and are required to maintain this throughout their undergraduate degree.

2015-2019   School of Informatics, Computing, and Engineering Dean's List
given for maintaining a GPA above 3.7.

2018   Second place at Systems, Programming, Languages, and Applications: Software for Humanity (SPLASH 2018) Student Research Competition

2018   Cornell, Maryland, and Max Planck Pre-Doctoral Research School (CMMRS) Travel Award

2017   First place at the SICE Research & Projects Symposium
presented my compilers course project: One Weird Trick to Compile Call/cc.

2017   Programming Languages Mentoring Workshop (PLMW) at the International Conference on Functional Programming (ICFP) Travel Award

Presentations

2025   *Type Universes as Kripke Worlds: Memory Management Edition*
Presented at: International Workshop on Aliasing, Capabilities, and Ownership (IWACO 2025).

2023   *One Weird Trick to Untie Landin's Knot*
Presented at: Higher-Order Programming with Effects (HOPE 2023).

2022   *Dependent-type-preserving Memory Allocation*
Presented at: Principles of Programming Languages (POPL 2022) Student Research Competition.

2021   *The ANF Translation Preserves Dependent Types up to Extensional Equality*
Presented at: Languages, Systems, and Data (LSD) Seminar at UC Santa Cruz.

2019   *Reigniting Fuse, an Online Partial Evaluator for Scheme*
Presented at: Scheme Workshop at the International Conference on Functional Programming (ICFP).

2018   *Obsidian in the Rough: A Case Study Evaluation of a New Blockchain Programming Language*
Presented at: Midwest Programming Languages Summit (MWPLS); Systems, Programming, Languages, and Applications: Software for Humanity (SPLASH) Student Research Competition.

Research Experience

2019   Undergraduate thesis with Professor Sam Tobin-Hochstadt, developing a partial evaluator for linklets in the Racket language.

Summ. 2018   **Carnegie Mellon University**, Pittsburgh, Pennsylvania

- Conducted a case study evaluation of a blockchain programming language, Obsidian.

- Contributed to a new feature of the language as a result of this evaluation.

- Wrote and presented the work with a student research competition submission and poster.

Spring 2018   **Indiana University**, Bloomington, Indiana

- Contributed to a current research compiler, Gibbon, which optimizes traversals over tree data structures.

- Extended the current language from a first order language to a higher order language.

- Wrote a final report summarizing the work, citing the primary resources found and used.

Work Experience

Summ. 2019 **Galois Inc**, Portland, Oregon
Software Engineering/Research Intern

- Built a system which generated random tests for an API based on a high-level specfication.

- Developed a prototype of a typechecker for an advanced type system.

2016-2019 **Indiana University**, Bloomington, Indiana
IU Peer Coach

- Assisted all students with registering, scheduling, and planning classes.

- Held 8-10 appointment and drop-in hours to provide support for students one on one.

- Organized degree-planning workshops to help inform and prepare incoming students.

Summ. 2017 **JPMorgan Chase & Co**, Chicago, Illinois
Tech Analyst Intern

- Learned about various software development tools and the SDLC.

- Refactored an existing application to prepare it for cloud deployment.

- Recreated the user interface into a portable widget.

Teaching

Spring 2025 CPSC 411 - Compilers (sessional instructor)
Summ. 2023 CPSC 110 - Computation, Programs, and Programming (sessional instructor)
Spring 2023 CPSC 411 - Compilers
Spring 2022 CPSC 411 - Compilers
Fall 2021 CPSC 311 - Programming Languages
Fall 2020 CPSC 509 - Programming Languages (graduate course)
Spring 2019 CSCI-C 211 - Introduction to Computer Science
Fall 2018 CSCI-C 311 - Programming Languages & EDUC-X 152 Mapping Your Future
Spring 2018 CSCI-B 490 - Dependent Types
Fall 2017 CSCI-C 311 - Programming Languages
Spring 2017 CSCI-C 211 - Introduction to Computer Science, making instructional videos.
Fall 2016 CSCI-C 211 - Introduction to Computer Science
Spring 2016 CSCI-C 211 - Introduction to Computer Science

Service

2022-2023 Served on Graduate Affairs Committee for the Computer Science Department at UBC.
2022 ECOOP Artifact Evaluation Committee.
2020-2022 President of UBC Computer Science Graduate Student Association (CSGSA).

2019-2021 Events director for UBC Women in Computer Science (WiCS).

2018-2024 Student Volunteer at International Conference on Functional Programming (ICFP) 2018-2023, Programming Language Design and Implementation (PLDI) 2019-2020, and Principle of Programming Languages (POPL) 2020-2022,2024.

2019 VP Social for UBC Computer Science Graduate Student Association.

2018 Organizational Committee for Opportunities for Undergraduate Research in Computer Science (OurCS), held at Indiana University in 2018.

Also served on a student research panel.