

FABIAN MUEHLBOECK (MÜHLBÖCK)

Work Address

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RESEARCH INTERESTS

PL

I am interested in programming languages and easy-to-use techniques to help programmers write, understand, and maintain code, including type system/language design, and efficient implementation of dynamic checks and monitoring, using tools and techniques from machine-verified proofs to low-level compiler optimizations and operating system kernel hacks.

EDUCATION

- 2019 Ph.D., Computer Science, Cornell University, Ithaca, NY
Advisor Ross Tate
Thesis Efficient Runtimes for Gradual Typing
Minor Modern Political Philosophy/Ethics and Morality
- 2017 M.S., Computer Science, Cornell University, Ithaca, NY
- 2013 M.S., Computer Science, Northeastern University, Boston, MA
Advisor Mitchell Wand
Thesis Checking Binding Hygiene Statically
- 2010 BSc, Software & Information Engineering, TU Wien, Vienna, Austria

PROFESSIONAL APPOINTMENTS

- 2019-present Postdoc, Institute of Science and Technology Austria, Henzinger Group

AWARDS/FELLOWSHIPS

- 2019 Distinguished Artifact Reviewer, OOPSLA
- 2017 Distinguished Paper, OOPSLA
- 2017 & 2015 Facebook Fellowship Finalist
- 2014 TA Recognition (Cornell)
- 2013 Teaching Award (Northeastern)
- 2012 Yiannis Tsiounis Scholarship
- 2011 Fulbright Exchange Grant

PUBLICATIONS (PEER-REVIEWED CONFERENCES/JOURNALS)

- OOPSLA 2021 **Fabian Muehlboeck** and Ross Tate. Transitioning from Structural to Nominal Code with Efficient Gradual Typing. In *Proceedings of the ACM on Programming Languages*, vol 5., no. OOPSLA, Chicago, IL, 2021.
- RV 2021 **Fabian Muehlboeck** and Thomas A. Henzinger. Differential Monitoring. In *International Conference on Runtime Verification*, online, 2021.
- OOPSLA 2018 **Fabian Muehlboeck** and Ross Tate. Empowering Union and Intersection Types with Integrated Subtyping. In *Proceedings of the ACM on Programming Languages*, vol 2., no. OOPSLA, Boston, MA, 2018.
- OOPSLA 2017 **Fabian Muehlboeck** and Ross Tate. Sound Gradual Typing is Nominally Alive and Well. In *Proceedings of the ACM on Programming Languages*, vol 1., no. OOPSLA, Vancouver, Canada, 2017.
- PLDI 2014 Ben Greenman, **Fabian Muehlboeck**, and Ross Tate. Getting F-Bounded Polymorphism into Shape. In *Proceedings of the 35th ACM SIGPLAN Conference on Programming Language Design and Implementation*, Edinburgh, UK, 2014.

ARXIV/WORK IN PREPARATION

- CoRR 2021 Guillaume Dubach and **Fabian Muehlboeck**. Formal verification of Zagier's one-sentence proof. In *CoRR*, vol. abs/2103.11389, 2021.
- In Preparation **Fabian Muehlboeck**, Christian Schilling, and Thomas A. Henzinger. Partial Semantics for Partial Programs via Edit Models. In preparation.
- In Preparation **Fabian Muehlboeck** and Ross Tate. Towards Practical Inferable and Gradualizable Generics. In preparation.

SERVICE

- 2021/2022 External Review Committee, Artifact Evaluation Committee, OOPSLA 2022
- 2020 Reviewer, TOPLAS
- 2020 Organizing Committee, Young Scientist Symposium, IST Austria
- 2019 Artifact Evaluation Committee, OOPSLA 2019
- 2018 Artifact Evaluation Committee, ECOOP 2018
- 2017 Cornell CS PhD Admissions Committee
- 2013-2019 Various Departmental Czarships (Czars, Desks, Colloquium, Student Brown Bag, PhD Student Visit Day) and PhD student mentor at Cornell CS

OUTREACH

- 2021/2022 Zoom a Scientist, IST Austria (classes, grades 1-13)
Answering questions about my work and being a scientist in general
- 2014-2019 Expand Your Horizons, Cornell (girls, grades 7-9)
Holding programming workshops; I designed a simple interface for programming a robot as a state machine navigating mazes:
<https://fabianmuehlboeck.github.io/picobot-ui/>

TEACHING EXPERIENCE

- 2017 SP CS 6110 (Advanced Programming Languages), Guest Lecture for Adrian Sampson
- 2014 SP CS 2800 (Discrete Structures), Teaching Assistant for Graeme Bailey
- 2013 FA CS 4120/4121 (Compilers), Teaching Assistant for Ross Tate
- 2012 SP/FA CS 5010 (Program Design Paradigms), (Head) Teaching Assistant for Mitchell Wand
- 2010 W/2009 W E 185.162 (Object-Oriented Programming), Tutor (~TA) for Franz Puntigam
- 2010 S/2009 W E 185.179 (Logic Programming), Tutor (~TA) for Erich Neumerkel

INDUSTRY EXPERIENCE

- 2016 Software Engineering Intern, Google, Inc., Mountain View, CA
Host Kevin Bierhoff
Designed and implemented Java bytecode optimizations and improved testing framework for such optimizations
- 2006-2011 Intern, PBS Logitek GmbH, Wels, Austria
(Summers) As the essentially only in-house software developer, I wrote entire applications for probabilistic stocktaking in automated warehouse and phone billing, fixed system for history-based re-stocking suggestions, and wrote many smaller scripts and internal applications

MISCELLANEOUS

- Languages German (native), English (fluent)
- Citizenship Austria