

Ben Greenman  
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Kahlert School of Computing  
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## RESEARCH INTERESTS

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*General interests:* Language design issues regarding proofs, performance, and people. What guarantees do languages offer, how efficiently can they run, and to what extent do they help users meet their goals?

*Keywords:* Migratory typing, Language interoperability, Formal methods, Human factors

## EDUCATION

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- Northeastern University 2014 – 2020
  - Degree* Ph.D
  - Area* Programming Languages
  - Advisor* Matthias Felleisen
  - Thesis* Deep and Shallow Types
- Cornell University 2013 – 2014
  - Degree* Master of Engineering
  - Major* Computer Science
  - Advisor* Ross Tate
- Cornell University 2010 – 2013
  - Degree* Bachelor of Science
  - Major* Industrial and Labor Relations
  - Minor* Computer Science
- Hudson Valley Community College 2009 – 2010
  - General studies, toward a guaranteed transfer to Cornell ILR*

## EMPLOYMENT

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- University of Utah August 2023 – ongoing  
Assistant Professor
- Brown University 2021 – 2023  
Postdoctoral Researcher, CIFellows 2020

*Mentor* **Shriram Krishnamurthi**

- Knightsbridge Park  
Consultant, Web Scraping 2017
- Cornell University  
Research Assistant 2012 – 2014
- Rentenna Inc.  
Software Engineering Intern 2012 – 2014

**TEACHING** \_\_\_\_\_

- CS 5110/6110: Software Verification 2024  
Instructor, 22 students
- CS 3520/6520: Programming Languages 2023  
Co-Instructor with Matthew Flatt, 159 students
- Topics in PL and Systems: Tables and Humans 2021  
Organizer
- Software Development 2018, 2020  
Teaching Assistant
- Fundamentals I 2016  
Teaching Assistant
- Object-Oriented Design 2016  
Teaching Assistant
- Functional Programming and Data Structures 2012 – 2014  
Teaching Assistant

**STUDENTS SUPERVISED** \_\_\_\_\_

- Mrigank Pawagi 2024 – ongoing  
, via OSRE 2024
- Hanwen Guo 2024 – ongoing  
Ph.D., University of Utah
- **Dibri Nsofor** 2023 – ongoing  
Ph.D., University of Utah
- **Ashton Wiersdorf** 2022 – ongoing  
Ph.D., University of Utah
- Suyasha Bobhate 2023 – 2024  
M.S, University of Utah

- [Sara Nurollahian](#) 2024 – ongoing  
Ph.D., University of Utah  
[Committee Member. Advisor: [Eliane Wiese](#)]
- Vivaan Rajesh 2023 – ongoing  
Hillcrest High School,
- Siddhartha Prasad 2022 – ongoing  
Ph.D., Brown University
- Rob Durst 2023 – 2023  
Independent Researcher,
- Caspar Popova 2023 – 2023  
Independent Researcher,
- Aniket Karna 2023 – 2023  
M.S., University of Utah
- Taylor Allred 2022 – 2023  
M.S., University of Utah
- Qianfan Chen 2021 – 2022  
Sc.B. with Honors [[thesis](#)], Brown University
- Kuang-Chen Lu 2021 – 2022  
Ph.D., Brown University
- Milo Davis 2017  
B.S., Northeastern University
- Zeina Migeed 2016 – 2017  
B.S., Northeastern University

## AWARDS

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- [Open Source Research Experience: Static Python Perf](#) 2024  
role: Mentor; funding via [NSF 2024 Summer of Reproducibility](#)  
PI Cormac Flanagan, Co-PI Stephanie Lieggi, Former PI Carlos Maltzahn
- [NSF SHF: Small: Little Tricky Logics](#) 2023  
role: Postdoc; PI Shriram Krishnamurthi, Co-PIs: Tim Nelson, Rob Lewis, and Milda Zizyte
- [CRA/CCC/NSF CI Fellowship](#) 2021 – 2023
- SIGPLAN Student Scholarship: [50 Years of the ACM A.M. Turing Award](#) 2017
- Northeastern CCIS Graduate Community Service Award 2016
- Cornell CS Teaching Award 2014
- Cornell CS Teaching Award 2013

## PROFESSIONAL SERVICE

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- NSF Panel Reviewer 2024
- Teaching Area Coordinator: Programming Languages and Web 2024
- K-12 Outreach Planning Committee 2023 – 2024
- Co-Chair of Artifact Evaluation Committee & ERC OOPSLA 2023, 2022
- Program Committee SOAP 2024  
TFP 2023  
HATRA 2023, 2022  
DLS 2022  
ICFP 2021, PLDI 2021
- Reviewer JuliaCon 2024  
ACM TOPLAS 2023  
JFP 2024, 2023, 2020, 2019
- External Review Committee ESOP 2023, ICFP 2023
- Artifact Evaluation Committee ECOOP 2017, OOPSLA 2017, 2016
- Session Chair OOPSLA 2023, NJPLS 2023, ICFP 2021,

## PUBLICATIONS

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### Journal

- Ben Greenman, Christos Dimoulas, and Matthias Felleisen. TOPLAS 2023  
*Typed–Untyped Interactions: A Comparative Analysis*
- Ben Greenman, Asumu Takikawa, Max S. New, Daniel Feltey, Robert Bruce Findler, JFP 2019  
Jan Vitek, and Matthias Felleisen.  
*How to Evaluate the Performance of Gradual Type Systems*

### Conference, Symposium, and Hybrid Conference / Journal

- Ashton Wiersdorf, Stephen Chang, Matthias Felleisen, and Ben Greenman ECOOP 2024  
*Type Tailoring*
- Ben Greenman, Siddhartha Prasad, Antonio Di Stasio, Shufang Zhu, FM 2024  
Giuseppe De Giacomo, Shriram Krishnamurthi, Marco Montali, Tim Nelson, and Milda Zizyte  
*Misconceptions in Finite-Trace and Infinite-Trace Linear Temporal Logic*
- Tim Nelson, Ben Greenman, Siddhartha Prasad, Tristan Dyer, Ethan Bove, OOPSLA 2024  
Qianfan Chen, Charles Cutting, Thomas Del Vecchio, Sidney LeVine, Julianne Rudner,  
Ben Ryjikov, Alexander Varga, Andrew Wagner, Luke West, and Shriram Krishnamurthi  
*Forge: A Tool and Language for Teaching Formal Methods*

- Ben Greenman, Alan Jeffrey, Shriram Krishnamurthi, and Mitesh Shah *Privacy-Respecting Type Error Telemetry at Scale* Programming 8.3, 2024
- Siddhartha Prasad, Ben Greenman, Tim Nelson, and Shriram Krishnamurthi *Conceptual Mutation Testing for Student Programming Misconceptions* Programming 8.2, 2024
- Siddhartha Prasad, Ben Greenman, Tim Nelson, and Shriram Krishnamurthi *Generating Programs Trivially: Student Use of Large Language Models* CompEd 2023
- Ben Greenman, Matthias Felleisen, and Christos Dimoulas *How Profilers Can Help Navigate Type Migration* OOPSLA 2023
- Matthew Flatt, Taylor Allred, Nia Angle, Stephen De Gabrielle, Robert Bruce Finder, Jack Firth, Kiran Gopinathan, Ben Greenman, Siddhartha Kasivajhula, Alex Knauth, Jay McCarthy, Sam Phillips, Sorawee Porncharoenwase, Jens Axel Søgaard, and Sam Tobin-Hochstadt *Rhombus: A New Spin on Macros Without All The Parentheses* OOPSLA 2023
- Lukas Lazarek, Ben Greenman, Matthias Felleisen, and Christos Dimoulas *How to Evaluate Blame for Gradual Types, Part 2* ICFP 2023
- Ben Greenman *GTP Benchmarks for Gradual Typing Performance* ACM REP 2023
- Ben Greenman, Sam Saarinen, Tim Nelson, and Shriram Krishnamurthi *Little Tricky Logic: Misconceptions in the Understanding of LTL* Programming 7.2, 2023
- Kuang-Chen Lu, Ben Greenman, Carl Meyer, Dino Viehland, Aniket Panse, and Shriram Krishnamurthi *Gradual Soundness: Lessons from Static Python* Programming 7.1, 2023
- Siddhartha Prasad, Ben Greenman, Tim Nelson, John Wrenn, and Shriram Krishnamurthi *Making Hay from Wheats: A Classsourcing Method to Identify Misconceptions* Koli Calling 2022
- Ben Greenman *Deep and Shallow Types for Gradual Languages* PLDI 2022
- Ben Greenman, Lukas Lazarek, Christos Dimoulas, and Matthias Felleisen *A Transient Semantics for Typed Racket* Programming 6.2, 2022
- Kuang-Chen Lu, Ben Greenman, and Shriram Krishnamurthi *Types for Tables: A Language Design Benchmark* Programming 6.1, 2022
- Lukas Lazarek, Ben Greenman, Matthias Felleisen, and Christos Dimoulas *How to Evaluate Blame for Gradual Types* ICFP 2021
- Ben Greenman, Matthias Felleisen, and Christos Dimoulas *Complete Monitors for Gradual Types* OOPSLA 2019
- Preston Tunnell Wilson, Ben Greenman, Justin Pombrio, Shriram Krishnamurthi. *The Behavior of Gradual Types: A User Study* DLS 2018

- Daniel Feltey, Ben Greenman, Christophe Scholliers, Robert Bruce Findler, and Vincent St. Amour. *Collapsible Contracts: Fixing a Pathology of Gradual Typing* OOPSLA 2018
- Ben Greenman, Matthias Felleisen. *A Spectrum of Type Soundness and Performance* ICFP 2018
- Ben Greenman, Zeina Migeed. *On the Cost of Type-Tag Soundness* PEPM 2018
- Sam Tobin-Hochstadt, Matthias Felleisen, Robert Bruce Findler, Matthew Flatt, Ben Greenman, Andrew M. Kent, Vincent St-Amour, T. Stephen Strickland, and Asumu Takikawa. *Migratory Typing: 10 Years Later* SNAPL 2017
- Stephen Chang, Ben Greenman, and Alex Knauth. *Type Systems as Macros* POPL 2017
- Asumu Takikawa, Daniel Feltey, Ben Greenman, Max S. New, Jan Vitek, and Matthias Felleisen. *Is Sound Gradual Typing Dead?* POPL 2016
- Ben Greenman, Fabian Muehlboeck, and Ross Tate. *Getting F-Bounded Polymorphism into Shape* PLDI 2014

## Workshop

- Taylor Allred, Xinyi Li, Ashton Wiersdorf, Ben Greenman, and Ganesh Gopalakrishnan. *FlowFPX: Nimble Tools for Debugging Floating-Point Exceptions* JuliaCon 2023
- Asumu Takikawa, Daniel Feltey, Ben Greenman, Max S. New, Jan Vitek, and Matthias Felleisen. *Position Paper: Performance Evaluation for Gradual Typing* STOP 2015

## INVITED TALKS

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- **BYU Grad Seminar** 2023  
*How Profilers Can Help Navigate Type Migration*
- **TLf@AAAI-SSS'23** 2023  
*Towards LTLf Misconceptions*
- **VardiFest, NJPLS** 2022  
*Little Tricky Logic: Misconceptions in the Understanding of LTL*
- **Racket Con** 2020, 2022  
*Shallow Typed Racket*  
*Shallow and Optional Types for Typed Racket*

- [Boston University POPV Seminar](#) 2020  
*Complete Monitoring for Gradual Types*
- [GRACE Workshop](#) 2018  
*Three Approaches to Gradual Typing*

## VOLUNTEERING

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- [El Turco: Human-AI dialogue](#) 2023 – 2024  
Programmer
- Bootstrap Professional Development Summer 2021  
Teaching Assistant
- Housing Chair [SPLASH 2018](#)
- Northeastern CCIS Hiring Committee Spring 2018  
Student Representative
- PRL Offsite Fall 2019  
Organizer
- [Each One Teach One](#) Fall 2015  
AP Java Tutor
- Student Volunteer [OOPSLA 2019](#); [Turing Celebration 2017](#); [POPL 2016, 2018](#);  
[PLDI 2016](#); [ICFP 2015, 2018](#); [ECOOP 2015, 2016](#)
- Ithaca Media Arts Summer 2012  
Teacher, LEGO Mindstorms Camp
- Cornell Math Explorers Winter 2011  
Module Designer

## PROFESSIONAL MEMBERSHIPS

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- IEEE 2023 – ongoing
- IEEE Computer Society 2023 – ongoing
- ACM 2023 – ongoing
- ACM SIGPLAN 2016 – ongoing

## BIOGRAPHY

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Ben Greenman is an assistant professor in the Kahlert School of Computing at the University of Utah. He earned his Ph.D. from Northeastern University in 2020 and was a CIFellows 2020 postdoc at Brown University. His research focus is the science of language design. His team develops methods to measure performance, prove guarantees, and understand human factors for languages and systems.