

Ben Greenman
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RESEARCH INTERESTS

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

- 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

- University of Utah 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

- Software Verification
Instructor 2024
- Programming Languages
Co-Instructor 2023
- Topics in PL and Systems: Tables and Humans
Organizer 2021
- Software Development
Teaching Assistant 2018, 2020
- Fundamentals I
Teaching Assistant 2016
- Object-Oriented Design
Teaching Assistant 2016
- Functional Programming and Data Structures
Teaching Assistant 2012 – 2014

STUDENTS SUPERVISED

- [Dibri Nsofor](#)
Ph.D., University of Utah 2023 – ongoing
- [Ashton Wiersdorf](#)
Ph.D., University of Utah 2022 – ongoing
- Suyasha Bobhate
M.S, University of Utah 2023 – ongoing
- [Sara Nurollahian](#)
Ph.D. (Committee Member), University of Utah
Advisor: [Eliane Wiese](#) 2024 – ongoing
- Vivaan Rajesh
—, Hillcrest High School 2023 – ongoing

- Siddhartha Prasad
Ph.D., Brown University 2022 – ongoing
- Rob Durst
—, Independent Researcher 2023 – 2023
- Caspar Popova
—, Independent Researcher 2023 – 2023
- Aniket Karna
M.S., University of Utah 2023 – 2023
- Taylor Allred
M.S., University of Utah 2022 – 2023
- Qianfan Chen
Sc.B. with Honors [thesis], Brown University 2021 – 2022
- Kuang-Chen Lu
Ph.D., Brown University 2021 – 2022
- Milo Davis
B.S., Northeastern University 2017
- Zeina Migeed
B.S., Northeastern University 2016 – 2017

AWARDS

- NSF SHF: Small: Little Tricky Logics
Postdoc 2023 – 2025
- CRA/CCC/NSF CI Fellowship 2021 – 2023
- SIGPLAN Student Scholarship to: 50 Years of the ACM A.M. Turing Award 2017
- Northeastern CCIS Graduate Community Service Award 2016
- Cornell CS Teaching Award 2014, 2013
- Cornell CS Teaching Award 2013

PROFESSIONAL SERVICE

- 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,

PROFESSIONAL MEMBERSHIPS

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

PUBLICATIONS

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

- 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 Programming 8.3, 2024
Privacy-Respecting Type Error Telemetry at Scale
- Siddhartha Prasad, Ben Greenman, Tim Nelson, and Shriram Krishnamurthi Programming 8.2, 2024
Conceptual Mutation Testing for Student Programming Misconceptions

- Siddhartha Prasad, Ben Greenman, Tim Nelson, and Shriram Krishnamurthi CompEd, 2023
Generating Programs Trivially: Student Use of Large Language Models
- Ben Greenman, Matthias Felleisen, and Christos Dimoulas OOPSLA 2023
How Profilers Can Help Navigate Type Migration
- 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 OOPSLA 2023
Rhombus: A New Spin on Macros Without All The Parentheses
- Lukas Lazarek, Ben Greenman, Matthias Felleisen, and Christos Dimoulas ICFP 2023
How to Evaluate Blame for Gradual Types, Part 2
- Ben Greenman ACM REP 2023
GTP Benchmarks for Gradual Typing Performance
- Ben Greenman, Sam Saarinen, Tim Nelson, and Shriram Krishnamurthi Programming 7.2, 2023
Little Tricky Logic: Misconceptions in the Understanding of LTL
- Kuang-Chen Lu, Ben Greenman, Carl Meyer, Dino Viehland, Aniket Panse, and Shriram Krishnamurthi Programming 7.1, 2023
Gradual Soundness: Lessons from Static Python
- Siddhartha Prasad, Ben Greenman, Tim Nelson, John Wrenn, and Shriram Krishnamurthi Koli Calling, 2022
Making Hay from Wheats: A Classsourcing Method to Identify Misconceptions
- Ben Greenman PLDI 2022
Deep and Shallow Types for Gradual Languages
- Ben Greenman, Lukas Lazarek, Christos Dimoulas, and Matthias Felleisen Programming 6.2, 2022
A Transient Semantics for Typed Racket
- Kuang-Chen Lu, Ben Greenman, and Shriram Krishnamurthi Programming 6.1, 2022
Types for Tables: A Language Design Benchmark
- Lukas Lazarek, Ben Greenman, Matthias Felleisen, and Christos Dimoulas ICFP 2021
How to Evaluate Blame for Gradual Types
- Ben Greenman, Matthias Felleisen, and Christos Dimoulas OOPSLA 2019
Complete Monitors for Gradual Types
- Preston Tunnell Wilson, Ben Greenman, Justin Pombrio, Shriram Krishnamurthi. DLS 2018
The Behavior of Gradual Types: A User Study
- Daniel Feltey, Ben Greenman, Christophe Scholliers, Robert Bruce Findler, and Vincent St. Amour. OOPSLA 2018
Collapsible Contracts: Fixing a Pathology of Gradual Typing
- Ben Greenman, Matthias Felleisen. ICFP 2018
A Spectrum of Type Soundness and Performance

- 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

- [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

- **El Turco: Human–AI dialogue** 2023
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

BIOGRAPHY

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.