

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 do they run, and to what extent do they help users meet their goals?

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

EMPLOYMENT AND EDUCATION

- Assistant Professor of Computer Science, University of Utah July 2023 – ongoing
 - Postdoctoral Researcher, Brown University 2021 – 2023
supported by the CIFellows 2020 program
Mentor: *Shriram Krishnamurthi*
 - Ph.D. in Computer Science, Northeastern University 2014 – 2020
Advisor: *Matthias Felleisen*
Thesis: *Deep and Shallow Types*
 - M. Eng. in Computer Science, Cornell University 2013 – 2014
Advisor: *Ross Tate*
 - Programmer, Rentenna Inc. 2012 – 2014
 - B.S. in Industrial and Labor Relations (ILR), Cornell University 2010 – 2013
Minor in Computer Science
 - General studies, Hudson Valley Community College 2009 – 2010
toward a guaranteed transfer to Cornell ILR

HONORS AND AWARDS

- Open Source Research Experience: Type Narrowing: A Language Design Benchmark 2025
received summer support for Siva Sathyaseelan, an undergraduate researcher from IIT (BHU) Varanasi sponsored by the NSF 2025 Summer of Reproducibility

- Open Source Research Experience: Static Python Perf received summer support for Mrigank Pawagi, an undergraduate researcher from IIS Bengaluru sponsored by the [NSF 2024 Summer of Reproducibility](#) 2024
- 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
- Distinguished Paper Award CAV 2025,
ECOOP 2025,
Programming 2023
- Distinguished Artifact Award ECOOP 2025

FUNDING

- Price College VPR Seed Grant Competition 2025

No external funding to date.

PUBLICATIONS

JOURNAL

- Nathaniel Hejduk, Ben Greenman, Matthias Felleisen, and Christos Dimoulas *Navigating Mixed-Typed Migration with Profilers* TOPLAS 2025
- Ben Greenman, Christos Dimoulas, and Matthias Felleisen. *Typed–Untyped Interactions: A Comparative Analysis* TOPLAS 2023
- Ben Greenman, Asumu Takikawa, Max S. New, Daniel Feltey, Robert Bruce Findler, Jan Vitek, and Matthias Felleisen. *How to Evaluate the Performance of Gradual Type Systems* JFP 2019

CONFERENCE & SYMPOSIUM

- Xuanyu Peng, Dominic Kennedy, Yuyou Fan, Ben Greenman, John Regehr, Loris D'Antoni *Nice to Meet You: Synthesizing Practical Abstract Transformers* POPL 2026
- Ashton Wiersdorf and Ben Greenman *Chorex: Restartable, Language-Integrated Choreographies* Programming 10.3, 2026

- Hanwen Guo and Ben Greenman
If-T: A Benchmark for Type Narrowing Programming 10.2, 2026
- Siddhartha Prasad, Ben Greenman, Tim Nelson, and Shriram Krishnamurthi
A Misconception-Driven Adaptive Tutor for Linear Temporal Logic CAV 2025
Distinguished Paper Award
- Siddhartha Prasad, Ben Greenman, Tim Nelson, and Shriram Krishnamurthi
Lightweight Diagramming for Lightweight Formal Methods: A Grounded Language Design ECOOP 2025
Distinguished Paper Award
- Ashton Wiersdorf, Stephen Chang, Matthias Felleisen, and Ben Greenman
Type Tailoring ECOOP 2024
- Ben Greenman, Siddhartha Prasad, Antonio Di Stasio, Shufang Zhu,
Giuseppe De Giacomo, Shriram Krishnamurthi, Marco Montali, Tim Nelson, and Milda Zizyte
Misconceptions in Finite-Trace and Infinite-Trace Linear Temporal Logic FM 2024
- Tim Nelson, Ben Greenman, Siddhartha Prasad, Tristan Dyer, Ethan Bove,
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 OOPSLA 2024
- 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 Programming 8.2, 2024
Conceptual Mutation Testing for Student Programming Misconceptions
- Siddhartha Prasad, Ben Greenman, Tim Nelson,
and Shriram Krishnamurthi
Generating Programs Trivially: Student Use of Large Language Models CompEd, December 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 Findler, 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, June 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
Editors' Choice Award
Programming 6.2, 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

- Dibri Nsofor and Ben Greenman
Toward a Corpus Study of the Dynamic Gradual Type HATRA 2024
- 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

- RPI CS Seminar
Kicking the Ladder Away: From Gradual Types to Plain Types June 2025
- Iowa State CS Colloquium
Toward a Science of Type System Design November 2024
- Research Challenges in Computing @ University of Utah
Rigorous Methods for Language Design 2024
- PLT @ Northwestern University
Teaching Formal Methods with Forge September 2024
- IETF 120: Usable Formal Methods Research Group
Forge: Usable Model-Finding July 2024
- BYU Grad Seminar
How Profilers Can Help Navigate Type Migration November 2023
- TLf@AAAI-SSS'23
Towards LTLf Misconceptions March 2023
- VardiFest
NJPLS
Little Tricky Logic: Misconceptions in the Understanding of LTL 2022
- Racket Con
Shallow Typed Racket
Shallow and Optional Types for Typed Racket 2020, 2022
- Boston University POPV Seminar
Complete Monitoring for Gradual Types 2020
- GRACE Workshop
Three Approaches to Gradual Typing 2018

TEACHING

UTAH

			Enrollment (Responded)	Course (Avg)	Instructor (Avg)
Fall 25	COMP 1020	Programming for All 2	TBD	TBD	TBD
Spring 25	CS 4470	Compilers	58 (51)	5.28 (?)	5.43 (?)
	CS 7936	PhD. Seminar	6	6	6
Fall 24	N/A	<i>parental leave</i>			
Spring 24	CS 5110/6110	Software Verification	22 (20)	5.5 / 5.82 (5.18)	6 / 5.68 (5.21)
Fall 23	CS 3520/6520	Programming Languages	159 (77)	5.32 / 5.82 (5.12)	5.45 / 5.68 (5.19)

BROWN

- Topics in PL and Systems: Tables and Humans
Seminar Organizer & Scribe 2021

NORTHEASTERN

- Software Development
Teaching Assistant 2018, 2020
- Fundamentals I
Teaching Assistant 2016
- Object-Oriented Design
Teaching Assistant 2016

CORNELL

- Functional Programming and Data Structures
Teaching Assistant 2012 – 2014

ADVISING

PH.D.

- Ashton Wiersdorf, started Fall 2023
- Dominic Kennedy, started Fall 2024
- Hanwen Guo, started Fall 2024

MASTERS

- Dibri Nsofor, MSc
project: *Data Science for Gradual Types* expected Fall 2025
- Suyasha Bobhate, IS Fall 2023
project: *Quantum Key-Value Stores* graduated Spring 2024

UNDERGRAD

- Jackson Brough, BS
thesis: *Constructive Real Analysis via Locators* expected Spring 2026

COMMITTEE MEMBERSHIP

- Zhaofeng Li, Ph.D, advisor [Anton Burtsev](#)
- Sara Nurollahian, Ph.D, advisor [Eliane Wiese](#)

INFORMAL MENTEES

Siva Sathyaseelan	IIT (BHU) Varanasi	Summer 2025
Mrigank Pawagi	IIS Bengaluru	Summer 2024
Vivaan Rajesh	Hillcrest High School	2023 – 2024
Siddhartha Prasad	Ph.D. Brown University	2022 – ongoing
Rob Durst		Fall 2023
Casper Popova		Spring – Fall 2023
Aniket Karna	M.S. University of Utah	Fall 2023
Taylor Allred	M.S. University of Utah	2022 – 2023
Qianfan Chen	Sc.B. Brown University [thesis]	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

DEPARTMENT, COLLEGE, AND UNIVERSITY SERVICE

- Committee Member: Lecturing Faculty Hiring Fall 2025 – Spring 2026
- Faculty Mentor: CS 1960: Success in Computing Summer 2025 – ongoing
- Committee Member: Graduate Admissions 2026 Spring 2025,
- Teacher: Price College Hi-Gear Summer Camp Summer 2025
- Teacher: Price College Exploring Engineering Summer Camp Summer 2024
- Teaching Area Chair: Programming Languages and Web Fall 2023 – ongoing
- Committee Member: K-12 Outreach Planning Committee Fall 2023 – Summer 2025

EXTERNAL SERVICE

- Co-Chair of Workshop Organization ICFP 2026, [ICFP/SPLASH 2025](#)
- Co-Chair of Artifact Evaluation Committee & ERC OOPSLA 2023, 2022

- Program Committee
 - DLS 2022
 - HATRA 2025, 2024, 2023, 2022
 - ICFP 2021
 - OOPSLA 2025
 - PLDI 2025, 2021
 - Scheme 2025
 - SOAP 2024
 - TFP 2025, 2023
- External Review Committee
 - ESOP 2023, ICFP 2023
- Journal Review
 - JFP 2024, 2023, 2020, 2019
 - JuliaCon 2024
 - SoftwareX 2025
 - STTT 2024
 - TOPLAS 2023
- NSF Panel Review
 - 2025, 2024
- Artifact Evaluation Committee
 - ECOOP 2017; OOPSLA 2017, 2016
- Session Chair
 - ICFP 2021; NJPLS 2023; OOPSLA 2023
- SIGPLAN-M Long-Term Mentor
 - Fall 2024 – ongoing
- El Turco: Human–AI dialogue
show: Mori Art Museum, 2025-02-13 – 2025-06-08
 - Spring 2024
- Senior Division Judge: University of Utah Science and Engineering Fair
 - Spring 2025

PROFESSIONAL MEMBERSHIPS

- IEEE, Member
 - 2023 – ongoing
- IEEE Computer Society, Member
 - 2023 – ongoing
- ACM, Member
 - 2023 – ongoing
- ACM SIGPLAN, Member
 - 2016 – ongoing
- Sigma Xi, Member
The Scientific Research Honor Society
 - 2025
- Phi Theta Kappa, Member
2-year college Honor Society
 - 2013

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.