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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 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

- 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
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

- [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

- 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, [OOPSLA 2023](#)
Jack Firth, Kiran Gopinathan, Ben Greenman, Siddhartha Kasivajhula, Alex Knauth, Jay McCarthy,
Sam Phillips, Sorawee Porncharoenwase, Jens Axel Sogaard, and Sam Tobin-Hochstadt
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, [Programming 7.1, 2023](#)
Aniket Panse, and Shriram Krishnamurthi
Gradual Soundness: Lessons from Static Python
- Siddhartha Prasad, Ben Greenman, Tim Nelson, John Wrenn, [Koli Calling, 2022](#)
and Shriram Krishnamurthi
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. *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

- **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 – 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

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.