Justin Lubin

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Curriculum Vitae, June 2020

Research Interest

I am interested in designing and leveraging type systems to make programming languages, environments, and tools more accessible, intuitive, and powerful.

By *accessible*, I mean usable by and inclusive of a wide variety of people, especially including people underrepresented in the field of computer science, people with disabilities, novices, and non-CS professionals such as doctors, business owners, engineers, and scientists. By *intuitive*, I mean intimately connected with human cognition, relying in an essential way on tools and research from the field of human-computer interaction. And finally, by *powerful*, I mean scalable as users gain experience, accommodating everyone from beginners to experts.

I believe that computation is empowering. But it is not computation alone that empowers: it is accessible, intuitive, and powerful computation that does so.

Education

University of California, Berkeley, Berkeley, CA 2020–
PhD in Computer Science.
Advisor: Sarah E. Chasins.

University of Chicago, Chicago, IL 2016–2020
Honors BS in Computer Science, BS in Mathematics, Minor in Music.
GPA: 3.97/4.00 (summa cum laude).

Research Experience

Research Assistant 2016–present
University of Chicago, Chicago, IL.
Advisor: Ravi Chugh.

Research Assistant 2018
Carnegie Mellon University, Pittsburgh, PA.
Advisors: Jonathan Aldrich (CMU), Alex Potanin (Victoria University of Wellington).

Other Experience

Teaching Assistant Spring 2020
University of Chicago, Chicago, IL
CMSC 22300: Functional Programming (Functional Data Structures and Web Programming)

Grader Fall 2018
University of Chicago, Chicago, IL
CMSC 16100: Honors Introduction to Programming I (Haskell)

Peer-Reviewed Publications

Program Sketching with Live Bidirectional Evaluation ICFP 2020
Justin Lubin, Nick Collins, Cyrus Omar, and Ravi Chugh.
In *Proceedings of the ACM on Programming Languages (PACMPL), Issue ICFP*.
Virtual, August 2020.

Sketch-n-Sketch: Output-Directed Programming for SVG UIST 2019
Brian Hempel, Justin Lubin, and Ravi Chugh.
In *Proceedings of the ACM Symposium on User Interface Software and Technology (UIST)*.
New Orleans, LA, October 2019.

Deuce: A Lightweight User Interface for Structured Editing ICSE 2018
Brian Hempel, Justin Lubin, Grace Lu, and Ravi Chugh.
In *Proceedings of the International Conference on Software Engineering (ICSE)*.
Gothenburg, Sweden, May 2018.

Peer-Reviewed Workshop Papers

Type-Directed Program Transformations for the Working Functional Programmer PLATEAU 2019
Justin Lubin and Ravi Chugh.
In *Proceedings of the 10th Workshop on Evaluation and Usability of Programming Languages and Tools (PLATEAU)*.
New Orleans, LA, October 2019.

Presentations

Program Synthesis with Live Bidirectional Evaluation 2019
Midwest Programming Languages Summit.
West Lafayette, IN, September 2019.

Approximating Polymorphic Effects with Capabilities 2018
SPLASH Student Research Competition.
Boston, MA, November 2018.

Direct Manipulation Programming in Sketch-n-Sketch 2018
International Conference on Functional Programming (ICFP) Tutorials.
St. Louis, MO, September 2018.
Presented with Ravi Chugh, Nick Collins, Brian Hempel, and Mikaël Mayer.

Posters

Program Synthesis with Live Bidirectional Evaluation 2019
UCISTEM Undergraduate Research Symposium.
Chicago, IL, September 2019.

Approximating Polymorphic Effects with Capabilities 2018
Midwest Programming Languages Summit.
Madison, WI, October 2018.

Honors

Sigma Xi Honor Society 2020–

NSF Graduate Research Fellowship 2020–2025

Student Marshal 2019–2020
University of Chicago, Chicago, IL.
Appointed by the president of the university.

Phi Beta Kappa Honor Society 2019–
University of Chicago, Chicago, IL.
Inducted in third year of undergraduate studies.

First Place (Undergraduate Category) 2018
SPLASH Student Research Competition, Boston, MA.
Awarded for *Approximating Polymorphic Effects with Capabilities*.

Dean's List 2016–2019
University of Chicago, Chicago, IL.

Community and Professional Service

Curriculum Designer 2020
South Side Free Music Program.
Chicago, IL, Winter 2020.

Collaborated with small group to design eight-week music enrichment curriculum for a Chicago elementary school without a music program.

Piano Teacher 2019–2020
South Side Free Music Program.
Chicago, IL, Autumn 2019–Winter 2020.

Student-run organization providing free weekly music lessons to children on the south side of Chicago.

Teacher 2019
UChicago Tech Interview Workshop.
Chicago, IL, Autumn 2019.

Collaborative peer-led technical interview workshops.

Curriculum Designer and Teacher 2019
Music Sociality.
Chicago, IL, Autumn 2019.

Enrichment program building social connections through music among children with autism and related sensory processing disorders.

Instructor 2019
compileHer Tech Capstone.
Chicago, IL, April 2019.

Computer science educational outreach for middle school girls in Chicago.

Student Volunteer 2019
Elm in the Spring Conference.
Chicago, IL, April 2019.

Student Volunteer 2018
International Conference on Functional Programming (ICFP).
St. Louis, MO, September 2018.

Other Activities

Oregon Programming Languages Summer School 2019
Topic: *Foundations of Probabilistic Programming and Security*.

University Chorus 2018–2020
University of Chicago, Chicago, IL.