

Justin Lubin

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Curriculum Vitae, August 2020

Research Interests

I am interested in leveraging and designing 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 2016–2020
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 Sketching with Live Bidirectional Evaluation** 2020
International Conference on Functional Programming (ICFP).
Virtual, August 2020.
- 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

Enrico Fermi Scholar <i>University of Chicago, Chicago, IL.</i>	2020
Harper Award <i>University of Chicago, Chicago, IL.</i> Awarded for exceptional achievement in MUSI 25820/35820: Analysis of String Quartets.	2020
Sigma Xi Honor Society	2020–
NSF Graduate Research Fellowship	2020–2025
Student Marshal <i>University of Chicago, Chicago, IL.</i> Appointed by president of the university.	2019–2020
Phi Beta Kappa Honor Society <i>University of Chicago, Chicago, IL.</i> Inducted in third year of undergraduate studies.	2019–
First Place (Undergraduate Category) <i>SPLASH Student Research Competition, Boston, MA.</i> Awarded for <i>Approximating Polymorphic Effects with Capabilities</i> .	2018
Dean's List <i>University of Chicago, Chicago, IL.</i>	2016–2020

Mentorship

Undergraduate Advisees Dhanya Jayagopal	2020
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Professional Service

Organizer #ShutdownPL @ ICFP. Virtual, August 2020.	2020
Student Volunteer <i>Elm in the Spring Conference.</i> Chicago, IL, April 2019.	2019
Student Volunteer <i>International Conference on Functional Programming (ICFP).</i> St. Louis, MO, September 2018.	2018

Community Service

Curriculum Designer <i>South Side Free Music Program.</i> Chicago, IL, Winter 2020. Collaborated with small group to design eight-week music enrichment curriculum for a Chicago elementary school without a music program.	2020
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Piano Teacher <i>South Side Free Music Program.</i> Chicago, IL, Autumn 2019–Winter 2020. Student-run organization providing free weekly music lessons to children on the south side of Chicago.	2019–2020
Teacher <i>UChicago Tech Interview Workshop.</i> Chicago, IL, Autumn 2019. Collaborative peer-led technical interview workshops.	2019
Curriculum Designer and Teacher <i>Music Sociality.</i> Chicago, IL, Autumn 2019. Enrichment program building social connections through music among children with autism and related sensory processing disorders.	2019
Teacher <i>compileHer Tech Capstone.</i> Chicago, IL, April 2019. Computer science educational outreach for middle school girls in Chicago.	2019

Other Activities

Oregon Programming Languages Summer School Topic: <i>Foundations of Probabilistic Programming and Security.</i>	2019
University Chorus <i>University of Chicago, Chicago, IL.</i>	2018–2020