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## Education

- 2021–Present **Ph.D.**, *UT Austin*, 3rd year.  
Working with James Bornholt. Studying compilers for hardware design from a programming languages perspective
- 2016–2020 **B.S.**, *Cornell University*, Ithaca.  
Major in Computer Science, Concentration in Linguistics
- 2012–2016 **High School Diploma**, *John Marshall HS*, Los Angeles.  
Graduated with High Honors

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## Publications

- ASPLOS 2024 "*Automatic Generation of Vectorizing Compilers for Customizable Digital Signal Processors*".  
**Samuel Thomas**, James Bornholt. **Best Paper Award!**
- ASPLOS 2021 "*A Compiler Infrastructure for Accelerator Generators*".  
**Samuel Thomas**, Rachit Nigam, Zhijing Li, Adrian Sampson.
- PLDI 2020 "*Predictable Accelerator Design with Time-Sensitive Affine Types*".  
Rachit Nigam, Sachille Atapattu, **Samuel Thomas**, Theodore Bauer, Apurva Koti, Zhijing Li, Yuwei Ye, Adrian Sampson, Zhiru Zhang.

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## Experience

- 2019 Summer **Capra**, *Cornell*.  
– 2021
- Lead the FuTIL project, a novel intermediate language and infrastructure that separates the structure of a program from the control of the program to enable more simple construction of software-hardware compilers. <https://github.com/cucapra/futil>.
    - First author on paper submitted to ASPLOS 2021.
    - Developed working infrastructure that generate synthesizable RTL.
    - Organize a team of six people.
    - Work closely with undergraduate researchers to help introduce them to Computer Science research.
  - Worked on Dahlia, a programming language that uses affine types to model hardware resources.
    - Helped to write the paper we submitted to PLDI 2020.
    - Ran extensive experiments comparing Dahlia to other HLS tools.
    - Helped write the Dahlia compiler.
- 2018 – 2020 **Teaching Assistant**, *Cornell*.  
Teaching assistant for CS 3110, a class on functional programming in OCaml, for three semesters. Taught a discussion section for two semesters. Helped rewrite a major assignment for the class.
- 2018 Summer **Information Science Institute**, *USC*.
- Worked with Greg Ver Steeg on meta machine learning problems. <https://github.com/sgpthomas/sklearn-pmlb-benchmarks>.
    - Design a system to scalably run machine learning experiments across hundreds of machines.
    - Reproduce the results from the Penn ML Benchmark suite.
    - Extend the metrics gathered from the Penn ML Benchmark suite to enable analysis of generalization error in machine learning algorithms.
  - Used the Penn ML Benchmark to gather large amounts of data on the performance of different machine learning algorithms.

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2017 Summer **Network Systems Laboratory, USC.**

Worked with Wyatt Loyd on DSEF, the Distributed Systems Experimental Framework, a framework for improving the reproducibility of Distributed Systems experiments.  
<https://github.com/DSEF>.

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