

# Andrew Alex

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## Education

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University of California, Santa Barbara

**Master of Science, Computer Science**, *September 2022 - June 2024 (Expected)*

**Advisor:** Jonathan Balkind **Research Focus:** Programming Languages and Computer Architecture

University of California, Los Angeles

**Bachelor of Science, Mathematics of Computation**, *June 2018*

### Relevant Coursework:

Advanced Computer Architecture, Randomized Algorithms, Program Analysis, Operating Systems, Machine Learning, Computer Networks, Programming Languages, Algorithm Design and Complexity, Numerical Analysis, Probability Theory

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## Research

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UCSB ArchLab, *September 2022 to Present*

### **Program Synthesis For Correct-by-Construction Processor Control Logic**

- Conducting research focused on using program synthesis to automatically generate control logic signals for a processor given an ISA specification and a partial processor implementation (i.e. without the control logic)
- Developed a compiler to generate Rosette program synthesis code from ILAng, a platform that enables formal modeling of ISAs and hardware components in C++ code

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## Professional and Teaching Experience

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UCSB Computer Science

**Teaching Assistant**, *September 2022 to Present*

- Winter 2023 and Spring 2023 - CS 154: Computer Architecture
- Fall 2022 - CS 9: Intermediate Python Programming

Zillow Group

**Senior Software Engineer**, *February 2021 to August 2022*

**Software Engineer**, *May 2019 to February 2021*

**Associate Software Engineer**, *August 2018 to May 2019*

**Trulia Data Engineering Intern**, *June 2017 to September 2017*

- Lead team of 3 other developers to build a new GIS matching system for property data using Spark and Kafka that reduced new data onboarding time in the AI organization from weeks to a day of developer time
- Interviewed and evaluated engineering candidates for developer roles on our team and mentor new hires and interns
- Gave technical and product presentations to other engineering teams as well as non-technical product managers to encourage adoption of our teams products including a company wide engineering summit
- Prototyped and pitched a Docker based development and deployment setup to engineering leadership to migrate a legacy web application to a more modern environment in AWS
- Optimized layout of Lucene search index used to store street segment data to allow for faster lookup times improving the end to end latency of our web application by ~30%

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## Technology Skills

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- **Proficient With:** Java, Scala, C++, Python
- **Experience With:** PyRTL, SystemVerilog, RISC-V, C, Racket, PHP, JavaScript
- **Tools and Frameworks:** Spark, Kafka, Flink, Git, Terraform, Docker, Kubernetes
- **AWS Products:** EMR, EC2, S3, Data Pipeline, RDS, Fargate