

## EDUCATION

---

- **University of California, Santa Cruz** Santa Cruz, CA  
*PhD in Computer Science; GPA: 4.0* September 2020 - Present (expected Spring 2025)
  - **Selected Classes:** Compiler Design, Computer Architecture, Programming Languages, Distributed Systems
- **University of California, Berkeley** Berkeley, CA  
*Bachelor of Arts in Computer Science; GPA: 3.6* August 2013 – May 2017
  - **Selected Classes:** Operating Systems, Efficient Algorithms, Computer Security, Introduction to Databases

## RESEARCH

---

- **UC Santa Cruz** Santa Cruz, CA  
*Graduate Researcher* September 2020 - Present
  - Testing memory models on GPUs. Developing new testing strategies for exposing rare but allowed weak memory behaviors on GPUs and evaluating these strategies' ability to find potential bugs in compilers/hardware
  - Using bounded model checkers to synthesize tests for distributed consistency models, with the goal of better characterizing the behaviors of various data types under different consistency models, as well as provide programs that can be run directly on systems to test their correctness.
  - Participate and contribute in Khronos Group meetings on Vulkan memory model specification and testing

## TEACHING

---

- **UC Santa Cruz** Santa Cruz, CA  
*Teaching Assistant* Spring 2021
  - TA for undergraduate class on parallel programming: homework development, office hours, grading homeworks/exams
- **UC Berkeley** Berkeley, CA  
*Teaching Assistant* Summer/Fall 2016
  - Taught students concepts in computer architecture: C memory management, MIPS assembly, number representation, CPU architecture, caches, virtual memory, distributed computing.
  - Updated lab exercises, including converting distributed computing lab from Hadoop to Spark.
  - Developed exam questions testing students on concepts like cache levels and hit rates

## INDUSTRY

---

- **Apple** Cupertino, WA  
*Intern* *July 2022 - September 2022*
  - Worked on Apple's GPU Platform Architecture team
- **Qualtrics** Seattle, WA  
*Software Engineer* *August 2017 - September 2020*
  - Developed new method of storing data in Elasticsearch indexes to reduce hardware usage by 10x while maintaining customer latency SLAs
  - Designed and implemented an improved ingestion pipeline using Scala and Akka Streams that increased data indexing rates by 40 percent while reducing operational load and providing fairness and prioritization
  - Built application using Scala and the Play framework to perform background tasks for Qualtrics' Analytics Engine like garbage collection and defragmentation of data in Elasticsearch
  - Contributed to incident remediation and operational hardening, including presenting analysis of severe incidents to engineering leadership
  - Mentored intern in summer long project involving new data analysis feature requested by key customers
- **Munchery** San Francisco, CA  
*Software Engineering Intern* *May 2015 - July 2015*
  - Developed Ruby bot on Slack allowing customer care to communicate directly with delivery drivers through Twilio SMS.
  - Contributed to open-source Jenkins plugin allowing provisioning of Docker containers on Amazon EC2.
  - Wrote comprehensive QA tests for updated Munchery checkout page.

## VOLUNTEERING

---

- **SPLASH/OOPSLA** Chicago, IL  
*Student Volunteer* *October 2021*
  - Help facilitate sessions, give information to attendees
- **TEALS** Seattle, WA and Velva, ND  
*Volunteer Teacher* *June 2018 - May 2020*
  - Taught high school introductory computer science classes in North Dakota (remotely) using Snap and Python
- **Computer Science Mentors** Berkeley, CA  
*Volunteer Teacher* *January 2015 - May 2016*
  - Led weekly section with four students to go over concepts from data-structures and algorithms class
- **Vice Chancellor's Student Advisory Committee** Berkeley, CA  
*Member* *August 2014 - May 2015*
  - Provide feedback to vice chancellor of student affairs on campus climate and programs affecting student groups I represented

## SKILLS

---

- **Languages** Scala, Java, Python, C/C++, Javascript
- **Technologies** WebGPU, Vulkan, CUDA, Elasticsearch, Spark, Kafka, Akka, Play Framework, Nomad, Jenkins