

# Benjamin Darnell

📍 6515 El Greco Rd. Apt D, Isla Vista, CA 93117

☎ (408) 797-8394 | ✉ [bdarnell@ucsb.edu](mailto:bdarnell@ucsb.edu) | 🌐 [Ben1152000](#) | 🌐 [bdarnell.com](#)

## EDUCATION

---

**B.S. in Computer Science** 2022  
College of Creative Studies, University of California, Santa Barbara GPA: 3.96/4.0

**High School Diploma** 2018  
Kehillah Jewish High School, Palo Alto, CA

## RESEARCH EXPERIENCE

---

**Research Assistant** June 2021—Present  
*UCSB ArchLab*

- Currently working with Prof. Jonathan Balkind on applications of PL in hardware design.
- Contributed to a paper using program synthesis for processor development. Extended an HDL to support holes for sketch-based program synthesis.
- Created [Sootty](#), a VCD waveform viewer for viewing hardware simulations in the terminal. Added support for integration with PyRTL. Currently mentoring undergraduate students on this project.
- Worked with a graduate student to create a formalization for system-on-chip protocols.

**Research Assistant** June 2020—2021  
*UCSB Programming Languages Lab*

- Assisted Prof. Ben Hardekopf on creating tools for teaching CS Theory.
- Extended MOSEL, a language of monadic second-order logic on strings, to describe DFA, NFA, and regex problems. Designed and created a C++ command-line tool to automate problem generation for use in upper-division Formal Languages classes. Presented poster at RACA-CON 2020.

## POSTERS & PAPERS

---

**Benjamin Darnell.** [Automatic Problem Creation](#). Poster presented at: 2020 Research and Creative Activities Conference (RACA-CON); 2020 Nov. 21; Santa Barbara, CA

*In Progress:*

Zachary D. Sisco, **Benjamin Darnell**, Jonathan Balkind, Timothy Sherwood, Ben Hardekopf. (2021). Program Synthesis for Sketch-Based Development of Processor Control Logic.

## HONORS & AWARDS

---

**UCEAP Memorial Scholarship, in Memory of John Marcum** 2021  
Awarded to one student each term for study abroad.

**University of California Regents Scholarship** 2018—2022  
Top 1% of applicants.

**CCS Summer Undergraduate Research Fellowship** 2020

## TEACHING EXPERIENCE

---

### Undergraduate Learning Assistant

2020—Present

*Department of Computer Science, University of California, Santa Barbara*

- Tutored advanced undergraduate classes in Object-Oriented Programming, Data Structures and Algorithms over five quarters.
- Graded assignments and gave personalized feedback to students.
- Led group review sessions and provided one-on-one support.

## WORK EXPERIENCE

---

### Undergraduate Research Assistant

Summer 2021

*Department of Computer Science, University of California, Santa Barbara*

- Paid research assistant for Jonathan Balkind in UCSB ArchLab.

### Software Development Intern

Summer 2019

*Jobvite, Inc., San Mateo, CA*

- Built a framework for Automation testing of Jobvite's Candidate Self-Scheduling web-interface in Java using the Selenium webdriver, and automated a suite of QA test cases.
- Learned agile development style, collaborated with other developers using git.

### VR Engineering Intern

Summer 2018

*Baobab Studios, Redwood Shores, CA*

- Performed QA testing on scenes in *Crow: the Legend*, a Oculus Virtual Reality game.
- Wrote scripts to automate audio/video conversion with ffmpeg to support mobile platforms.

### Laboratory Assistant

Summer 2017

*Los Alamos National Laboratory, NM*

- Synthesized a quantum dot display for the Bradbury Science Museum and performed data analytics programming using Igor.

## PROJECTS

---

### Algorithmic Redistricting using Markov Chains

*Fall 2021*

- Project for graduate-level Markov Chain Algorithms class (CS 292A), randomly sample possible redistricting plans to detect gerrymandering.

### Python-to-C translation ([github](#))

*Spring 2021*

- Wrote a compiler from python bytecode to C for graduate-level Runtime Systems class project.

## EXTRACURRICULARS

---

### Logistics Lead Coordinator, SB Hacks

*2020—Present*

- Managed budget, venue, catering, and website for UCSB's inclusive student-run hackathon.

### CCS Undergraduate Mentor

*2021—Present*

### Member, UCSB IEEE Chapter

*2020—Present*

### President, Juggling Club at UCSB

*2020—Present*