Benjamin Darnell

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EDUCATION

University of Illinois at Urbana-Champaign — Expected 2027
Ph.D. Student, Computer Science

University of California, Santa Barbara — 2022
B.S. with Highest Honors, Computing

Technion, Israel Institute of Technology — Summer 2022
International Student Exchange Program

RESEARCH EXPERIENCE

Graduate Research Assistant — 2022—Present
Department of Computer Science, University of Illinois

- Developing a low-code framework for creating domain-specific languages using techniques from program synthesis and AutoML (Supervised by Dr. Vikram Adve).

Research Assistant — 2021—2022
UCSB ArchLab

- Contributed to a paper using program synthesis for processor development. Extended an HDL to support holes for sketch-based program synthesis.
- Created an open-source 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 — 2020—2021
UCSB Programming Languages Lab

- Assisted Prof. Ben Hardekopf in 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

HONORS & AWARDS

UCEAP Memorial Scholarship, in Memory of John Marcum	*2021*
University of California Regents Scholarship	*2018—2022*
CCS Summer Undergraduate Research Fellowship	*2020*

TEACHING EXPERIENCE

Undergraduate Teaching 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

UCSB Department of Computer Science — Summer 2021
Undergraduate Research Assistant — *Santa Barbara, CA*

- Student research assistant for Jonathan Balkind in UCSB ArchLab.

Jobvite, Inc. — Summer 2019
Software Development Intern — *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.

Baobab Studios — Summer 2018
VR Engineering Intern — *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.

Los Alamos National Laboratory — Summer 2017
Laboratory Assistant — *Los Alamos, NM*

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

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*