

# NICOLAS REED

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## EDUCATION

### University of California, Berkeley

GPA: 3.66/4.00

*B.S. Electrical Engineering & Computer Sciences (EECS)*

*Expected May 2027*

**Relevant coursework:** Digital Design and Integrated Circuits with FPGA Lab (in progress), Computer Architecture and Machine Structures, Operating Systems (in progress), Signals and Circuits I & II, Data Structures, Structure and Interpretation of Computer Programs, Foundations of Data Science

## EXPERIENCE

### Sandisk

Milpitas, CA

*Software Development Intern*

*May 2025 – Present*

- Analyzed and reconciled CMDB and inventory data for 40,000+ virtual machines using Pandas, enabling automated cleansing and transformation workflows that identified gaps, standardized records, and generated actionable migration plans for a cloud provider transition.
- Streamlined license management and contract summarization for 10,000 enterprise applications by developing an AI assistant using LlamaIndex and NLP, delivering actionable insights that improved compliance and reduced spend.

### UC Berkeley SLICE Lab

Berkeley, CA

*Undergraduate Research Assistant*

*May 2025 – Present*

- Researching under Professor Sagar Karandikar to integrate AI tooling that improves the usability of Chipyard and FireSim frameworks for RISC-V hardware development.
- Extend RISC-V hardware components for architectural research by analyzing and simulating designs using Verilog and Chisel within the Chipyard toolchain.

### UC Berkeley Electrical Engineering & Computer Sciences (EECS)

Berkeley, CA

*Head Teaching Assistant*

*June 2024 – Present*

- Support 1,200+ students with C, RISC-V, Python, and Logisim through office hours and an online forum.
- Host weekly lab sections for 50+ students, guiding programming exercises and problem-solving practice.
- Develop weekly homework and lab assignments, and maintain course infrastructure using GitHub and Docker.
- Earned a 4.67/5.00 average teaching rating and ranked third in student acknowledgements on course feedback.
- Answer 1,500+ student questions per semester to lead online forum engagement.

### Micross Components - Silicon Turnkey Solutions

Milpitas, CA

*Engineering Intern*

*July 2023 – Aug. 2023*

- Conducted mechanical and PCB testing on 1,000+ devices, translating results into actionable insights via Excel.
- Organized 500+ items and launched a project to boost Cleanroom productivity via preventative maintenance.
- Resolved a test issue by documenting compromised semiconductors and identifying the damage stage.
- Improved operational efficiency by creating setup sheets and updating data packages to ensure accuracy.

## PROJECTS

### Multistage Pipelined RISC-V CPU

2025

- Designed a three-stage pipelined RISC-V CPU supporting 40+ I/R/B/S/J-type instructions for arithmetic, logic, memory, and control flow operations.
- Built the ALU, register file, and immediate generator to enable modular instruction execution.
- Implemented hazard detection and control logic to resolve data and control hazards and minimize stalls.

### Linguistic Data Analysis and Visualization Tools

2024

- Developed a browser-based tool that visualizes word usage over time by processing large CSV datasets.
- Created a semantic network modeling word relationships using graph traversal for efficient lookup and analysis.
- Practiced test driven development to ensure correctness and performance across modular Java packages.

### Scheme Interpreter

2024

- Implemented an interpreter for a subset of the Scheme language in Python, supporting core expressions and syntax.
- Applied semantic and lexical analysis techniques that machines use to evaluate and execute code.

## TECHNICAL SKILLS

**Languages:** C, Python, Verilog, RISC-V, Chisel, SQL, MATLAB, Lisp (Scheme)

**Tools & Frameworks:** Git, GDB, Valgrind, Pandas, NumPy, Logisim, Diligent WaveForms, LTSpice, Matplotlib