# 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 – August 2025*

- 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 - advised by Professor Sagar Karandikar* *May 2025 – Present*

- Integrate AI tooling to improve 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 – August 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** - *Logisim* 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** - *Java* 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 packages.

**Scheme Interpreter** - *Python* 2024

- Implemented an interpreter for a subset of Lisp (Scheme), 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, Digilent WaveForms, LTSpice, Matplotlib