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: Verilog, C, Python, Java, RISC-V, x86, Scala (Chisel), SQL, MATLAB, Lisp (Scheme)
Tools & Frameworks: Git, GDB, Valgrind, Pandas, NumPy, Logisim, Digilent WaveForms, LTSpice, Matplotlib