

CHRISTOPHER AVAKIAN

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EDUCATION

University of California, Berkeley

Aug. 2022 – May 2024

Bachelor of Science in Electrical Engineering and Computer Sciences

- **Coursework:** Digital Logic Design, Microelectronics, Machine Learning, Algorithms, Security

EXPERIENCE

Microfabrication Laboratory

- **Executed key fabrication processes**, including thermal oxidation, ion implantation, impurity diffusion, film deposition, lithography, etching, contacts, interconnections, and MEMS devices.
- **Manufactured advanced MOSFETs** and poly-Si surface microstructures, contributing to cutting-edge microfabrication advancements.
- **Performed post-fabrication measurements** on silicon devices to verify functionality and adherence to design specifications.

RISC-V CPU

- **Designed and developed a RISC-V CPU** from the ground up using Verilog.
- Implemented key architectural features, including:
 - **Pipelining** to increase CPU performance by 78%.
 - **Branch prediction** to minimize pipeline stalls and improve the efficiency.
 - Developed a **comprehensive datapath**, ensuring accurate data flow and control throughout the CPU.
- **Conducted thorough testing and validation**, ensuring the CPU met all functional and performance requirements.

MOSFET Design Project

- **Designed a MOSFET** to specific requirements using Synopsys Sentaurus.
- **Utilized advanced simulation tools** to optimize device parameters, ensuring the MOSFET met the given specifications for performance and reliability.
- Conducted **detailed analysis of electrical characteristics**, including threshold voltage, on/off current ratio, and subthreshold swing.

NASA Community College Aerospace Scholars (NCAS) – Lead Systems Engineer

- **Led a subteam of 5 members in a competitive simulation** among 10 other teams to design a spacecraft for a lunar mission. Our rocket design was not only the most cost-effective but also carried the highest payload mass, earning us 2nd place.
- **Authored a comprehensive Mission Report** on In-Situ Resource Utilization (ISRU) on the lunar surface.

SKILLS AND ABILITIES

- **Software Skills:** PyTorch, C/C++, SQL, Java, Python, Go, Flutter
- **Hardware Skills:** Verilog, LTspice, Synopsys Sentaurus, Circuit Design, PCB Design, Low Voltage Design, Control Circuits, Sensor Management
- **Technical Skills:** Machine Learning, Neural Networks, Back Propagation
- **Lab Experience:** Clean room experience, versed in lab safety procedures