DEVAN SOLIMAN

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SKILLS

Programming Languages: Assembly, C, C++, C#, HTML & CSS, Java, LaTeX, MATLAB, Python, SystemVerilog, Verilog

CAD: Autodesk Inventor, Cadence Virtuoso Studio, Cadence Xcelium, Siemens Catapult High-Level Synthesis, Synopsys Design Compiler, Vivado Design Suite

Prototyping: soldering, DMMs, oscilloscopes, logic analyzers, signal generators, FPGAs

PROJECTS

Open Action Camera 2022 – present

Created the world's smallest open-source action camera. Building video capturing software, OLED user interface, hot-swappable Li-ion power supply, and 3D-printable, high-durability enclosures compatible with various mounting systems and interchangeable Pi Zero form-factor boards.

MIPS Processor 2025

Implemented a custom 5-stage MIPS processor using Verilog. Developed the processor's datapath, control unit, arithmetic logic unit, and memory components, ensuring proper execution of MIPS instructions. Integrated pipeline stages for increased throughput and wrote control logic for hazard handling.

RTL Rasterizer 2024

Synthesized a rasterizer integrated circuit to convert vector graphics (lines, polygons) into raster images for display devices. Features up to 64x multisample anti-aliasing and optimizations to reduce triangle render time by up to 51%, dynamic power by up to 24%, and area by 41%. Fastest configuration could achieve over 71M triangles per second.

RTL Music Player + Visualizer 2023

Programmed an FPGA into a music player. Player read notes and time values from a ROM and generated sine waves to send to an audio output in real-time. Supported combining simultaneous notes into chords. Expanded functionality included track selection, fast-forward, rewind, and displaying waveforms via HDMI.

Bare Metal Console + Wireless Chat 2022

Built a desktop terminal running bare-metal on ARM. Programmed memory management system, drivers for input and graphics, shell, and commands. Integrated reliable two-way communication platform by writing wireless microcontroller driver, microcontroller firmware, and chatroom application.

EXPERIENCE

VR/AR Research Assistant, Virtual Human Interaction Lab (Stanford, CA) September 2023 – June 2024

- Built interactive virtual/augmented reality experiments in collaboration with Stanford researchers
- Created an augmented reality exhibit for prehistoric swamp fauna with the California Academy of Sciences

Analog Computing Research Assistant, Stanford School of Engineering June 2023 – August 2023

- Developed new programming tools (language, validator, compiler) for nontraditional computational platforms aimed at high-speed and high-efficiency applications

Data Analyst Intern, Hubbub July 2022 – September 2022

- Wrote software to monitor and visualize the prevalence of the monkeypox outbreak in the United States
- Leveraged Amazon Web Services and Microsoft Power Platform to process and store data

EDUCATION

Stanford University - **B.S. in Electrical Engineering** Expected December 2025

Relevant Coursework:

- Object-Oriented Programming
- Very-Large-Scale Integration
- Electricity and Magnetism
- Embedded Systems
- Hardware Architectures
- Circuits & Signal Processing
- Digital System Design
- Operating Systems
- Graphics

HOBBIES

- 3D-printed skateboards
- Mountain biking
- DIY laptops
- Tennis
- 24 Hours of Lemons
- Ultimate frisbee