Hayden Wolfe

Open to relocation in OKC, Dallas, or Austin | 405-982-3380 | hayden.wolfe@ou.edu | https://haydenwolfe.org

Skills

Embedded Design/Programming
ARM/RISC-V MCUs: (C/C++)
FPGA Design: (Altera, VHDL, Verilog)
Python Automation/Analysis:
(Pandas, NumPy, Django, Playwright)
Embedded Linux:
(Debian, Ubuntu, RPiOS)

Full-Stack Software Engineer
UI/Frontend Design:
(Flutter, React, JavaScript, HTML5)
Backend Design, API/LLM Integration:
(nginx, Go, FastAPI, Pydantic AI)
Cloud Deployment, Database Design:
(AWS EC2+S3, MySQL/PostgreSQL)

Hardware & Engineering Tools
PCB Design/Validation:
(Altium Designer, Fusion, EAGLE)
3D Printing, CAD:
(Fusion 360, SolidWorks)
Testing: (SPICE, MultiSim, LabView)
ML: (Sk-learn, PyTorch, TensorFlow)

Education

M.S. COMPUTER & ELECTRICAL ENGINEERING | THE UNIVERSITY OF OKLAHOMA (OU)
- Expected graduation for accelerated master's in computer and electrical engineering in May 2026

B.S. COMPUTER ENGINEERING | THE UNIVERSITY OF OKLAHOMA (OU)
- Graduated magna cum laude with bachelor's degree in computer engineering in May 2025
- OU Honor's College graduate
- Gallogly College of Engineering Dean's Honor Roll
- Selected for OU's 2024 Homecoming Royalty Court

Experience

ENGINEERING INTERN | SIMERGENT (MAY 2024 – AUG. 2025)
- Worked full-time summer 2024 and 2025; continued part-time during fall 2024 and spring 2025 semesters.
- Designed and delivered functional prototype for FDA-track in-home dialysis device: engineered 4-layer PCB (Fusion 360) with 50+ components, programmed Microchip MCU in C using FreeRTOS, and developed Flutter GUI with real-time patient monitoring interface to achieve automated overnight dialysis therapy.
- Developed Python script to integrate with FedEx API, automating determination of shipping costs and speeds.

IT INTERN | OKLAHOMA EMPLOYMENT SECURITY COMMISSION (JUNE 2023 – SPRING 2024)
- Worked full-time summer 2023; continued part-time through spring 2024.
- Programmed in Python to automate agency processes using Apache Airflow, organized team projects using Azure DevOps, serviced hardware issues, and assisted a workforce of 100+ employees from the IT Helpdesk.

Research

OU COMPUTATIONAL NEUROIMAGING AND NEUROENGINEERING LAB (CNNLAB) (DEC. 2024 – PRESENT)
- Developed Bash (Ubuntu) and MATLAB scripts to automate the interpretation and modeling of MRI data with Harvard's FreeSurfer software; improved lab's processing and modeling efficiency by 90%.

Leadership

IEEE ETA KAPPA NU (HKN) – PRESIDENT (SEPT. 2024 – PRESENT)
- Served as President of OU's chapter of IEEE's honors society (top 25% of ECE class).

OU PRESIDENT'S COMMUNITY SCHOLARS (MAY 2022 – MAY 2025)
- Served as Operations Chair (administrative and technological needs), Engagement Chair (planned and hosted 19 events for 100+ members), and Student Advisor (planned and emceed weekly meetings/leadership panels).

SIGMA PHI EPSILON – CHAPLAIN (SEPT. 2021 – MAY 2025)
- Coordinated weekly study meetings and offered counseling for members.

OU VICE PRESIDENT'S ADVISORY COUNCIL (SEPT. 2022 – MAY 2023)
- Represented the student body in roundtable discussions with President Harroz, VP/Dean Surrat, and OU leadership.

Projects (visit haydenwolfe.org for more information)

MORRIS-LECAR NEUROMORPHIC CIRCUIT – Designed and simulated a low-power spiking neuron in Tanner EDA (S-Edit, L-Edit) using 250nm CMOS technology. Performed transient SPICE analysis and optimized transistor sizing for energy efficiency (achieving 91.3% efficiency at 2.7 pJ/spike) and validated the physical layout through DRC verification.

THERAGUN MINI ALTERNATIVE – Designed and prototyped a low-cost handheld percussive therapy device, implementing variable speed control and heating functionality using analog circuits (555 timers, BJTs, MOSFETs) and custom CAD housing to match performance of $220+ commercial devices for a fraction of the cost.

HANDHELD INVENTORY SCANNER – Engineered a warehouse inventory device by porting a custom LineageOS build to a Raspberry Pi, developing a reactive Flutter frontend in secure kiosk mode. Integrated the hardware with an AWS EC2 + MySQL + FastAPI backend to enable real-time barcode scanning, user authentication, and database management.