

Graham Lopez

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github.com/nglopez34-arch | Portfolio: grahamsprojects.com

EE junior seeking a Summer 2027 internship

EDUCATION

Utah Valley University

Bachelor of Science in Electrical Engineering

Orem, UT

Graduating Spring 2028

- Relevant Completed Coursework: Circuit Theory, Digital Design, Numerical Methods

TECHNICAL SKILLS

Programming Languages: Python, C++, MATLAB, Verilog, Bash

Design & Simulation: KiCad, LTspice, SolidWorks, Git, L^AT_EX

Embedded & Systems: ESP32, PID control, UDP networking

Other: Welding (MIG/TIG/STICK), Soldering, 3D Printing, Spanish

PROJECTS & RESEARCH

Multi-Domain UAV Research | *Undergraduate Research with Dr. Masood Amin*

In progress

- Designing the electrical/communications system for a multidisciplinary submersible, aerial, and rover drone research project.

ESP32 Controlled Lamp | *Embedded Systems, C++, Welding, 3D Printing*

- Wrote ESP32 firmware and a C++ desktop app that streams 28 lighting effects at 60 FPS over a custom UDP protocol with automatic network discovery.
- Built the hardware: ESP32 protoboard driving a WS2812B LED strip, mounted in a 3D-printed housing on a welded steel base.

Lion's Mane Mushroom Fruiting Chamber | *Embedded Systems, PID Control*

In progress

- Building a PID-controlled chamber that holds 65°F, 90% humidity, and 650 ppm CO₂ for growing mushrooms.

Long/Short Intraday Trading System with Deep Learning | *PyTorch, C++, ONNX Runtime, Optuna*

- Built a system trading ~325 S&P 500 stocks: a TCN volatility forecaster feeds a Transformer predicting the mean and variance of 60-minute returns, trained on 18 months of minute bars and served by a real-time C++ engine via ONNX Runtime.
- Designed the portfolio layer with Kalman filtering, Black-Litterman shrinkage, and a closed-form long/short QP, plus volatility-scaled stops, drawdown circuit breakers, and live execution through the Alpaca API.

1000 Gallon Offset Smoker | *Mechanical Design, Welding, 3D Surface Modeling*

- Designed and fabricated a smoker from repurposed propane tanks, modeling the firebox as a parametric surface for an exact torch cut and applying heat transfer and fluid flow principles; delivered on a \$2,500 budget and sold for \$12,000.

WORK EXPERIENCE

Structural Welder

September 2022 – April 2023

SME Steel

West Jordan, UT

- Fabricated structural beams, girders, and columns from shop drawings with full-penetration welds that passed UT.

Door-to-Door Sales Representative

May 2024 – August 2025

Ridd Pest Control

Myrtle Beach, SC

- Managed a sales territory, building trust one-on-one and handling objections under pressure to generate ~\$150,000 in revenue.

LEADERSHIP

Zone Leader

Aug 2021 – Jan 2022

The Church of Jesus Christ of Latter-day Saints (Volunteer Leadership)

- Led and mentored ~40 missionaries across multiple cities, running trainings and coaching, overseeing goal setting and weekly reviews, and reporting progress to regional leadership.