

Trusten Lehmann-Karp

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EDUCATION

Harvey Mudd College

B.S., Engineering, Spanish Minor

Claremont, CA

Aug. 2024 - May 2028

Dean's List

- Relevant Coursework: Engineering Design, Engineering Systems, Digital Electronics and Computer Engineering, Multivariable Calculus, Linear Algebra, Physics Mechanics, Probability and Statistics, Computer Science

SELECTED PROJECTS

Underwater Robotics - Autonomous Surface Vehicle

Embedded Systems, Sensors, Analog Circuitry

- Engineered autonomous surface vehicle for depth-resolved environmental sensing using custom sensor payload.
- Implemented Beer-Lambert light attenuation model to quantify water depth profiles; achieved $\alpha = 0.855 \text{ m}^{-1}$ attenuation coefficient ($R^2 = 0.96$) across controlled trials.
- Performed soldering, PCB assembly, and hardware validation using oscilloscopes and multimeters; integrated pressure sensors with analog signal conditioning circuits.
- Combined electrical, mechanical, and software subsystems into functioning autonomous prototypes under time-constrained engineering lab conditions.

IMU Flight Controller - Custom PCB Design

KiCad, ESP32, Madgwick

- Designed and fabricated a custom PCB integrating an ESP32-C3 MCU, 6-axis IMU, and OLED display over I2C; resolved board-level issues (bus pull-ups, USB/bootloader config, pin conflicts) during bring-up and test
- Implemented a Madgwick AHRS filter for real-time attitude estimation, identifying and documenting a sensor-fusion failure mode under high angular rates

Autonomous Differential Drive Robot

ROS2, Raspberry Pi 4, Python

- Building an autonomous mobile robot from hardware to software, differential drive platform and PID motor control.
- Collecting structured trial data to quantify system performance: PID steady-state error, obstacle avoidance success rate, and navigation goal completion rate.

WiFi Message Display

ESP32, RFID, OLED

- Built WiFi-connected physical message display built on an ESP32, RFID, message revealed on 128x64 OLED.
- Architected firmware WiFi and API connections for live weather display, dual-timezone clock, and pixel animations.

EXPERIENCE

AI/ML Engineering Intern

New York, NY

EXL

Jun. 2026 - Present

- Architected end-to-end news NLP pipeline, extracting text/metadata, storing results in self-designed SQLite Schema.
- Engineered a transformer-based enrichment layer across 6 dimensions, paired with spaCy NER, allowing for topic, intent, format, political orientation, and industry classification, as well as overall and entity level sentiment analysis.
- Built an interactive Streamlit dashboard for visualizing enriched articles, for enterprise media stakeholders.

Machine Learning Engineer

New York, NY (Remote)

Priori Sport

Jul. 2025 - May 2026

- Built ML models to quantify behavior for professional and collegiate soccer teams (MLS, NCAA) using 3.2M+ events.
- Designed performance metrics including expected goals (xG, AUC 0.761) and expected assists (xA, AUC 0.981).
- Collaborating with analysts and engineers to debug models, validate against match film, and refine labeling logic.

Software Engineer Intern

New York, NY (Remote)

Astral

May 2025 - Jul. 2025

- Developed a modular Python SDK for AI agent prototyping, enabling rapid integration with multiple LLM backends.

AI Engineering Intern

New York, NY

Neuroaide

Dec. 2024 - Jan. 2025

- Optimized data workflows and database schemas to improve quality of AI-generated clinical reports.

SKILLS

Hardware & Embedded: Raspberry Pi, ESP32, C/C++, Oscilloscopes, Soldering, Circuit Design, KiCAD, SystemVerilog,

Programming & ML: Python, Java, PyTorch, scikit-learn, XGBoost, Pandas, Git

Languages: Spanish (Intermediate)

ACTIVITIES

Claremont-Mudd-Scripps Men's Soccer, NCAA DIII

Claremont, CA

Recruited Student-Athlete

Aug. 2024 - Present

- 20+ hrs/week of soccer, enhancing leadership and teamwork skills, 2024 SCIAC Champion, NCAA Sweet-16