Eli Keetch

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GitHub: github.com/eliKeetch

PROFILE

Computer engineering student and tech lead with experience developing custom integration software, improving client applications, and troubleshooting embedded and electromechanical systems.

EDUCATION

Utah Valley University

Bachelor of Science in Computer Engineering | Expected 2028

Additional training: Full Stack Web Development Bootcamp, DevMountain

TECHNICAL SKILLS

Electronics and testing: Electrical drawings, circuit diagnostics, soldering, oscilloscope, multimeter; I2C, SPI.

Design and fabrication: Fusion 360, Shapr CAD modeling, mechanical repair, welding; Altium Designer (beginner).

Programming and tools: C/C++ (Arduino), Python, JavaScript, Git; Arduino, ESP32/ESP8266, Raspberry Pi.

SELECTED PROJECTS

Brownout Survival Module | ECE 1000 Course Project

- Designed an interrupt-driven ATmega328P system using an LM393 comparator with hysteresis and I2C FRAM.
- Built double-buffered FRAM storage with sequence numbers and commit markers to reject interrupted writes.
- Migrated from an Arduino Uno to a Nano to a bare ATmega328P, reducing waste and parts and improving speed.
- Built a MOSFET-based voltage-sag generator and a Raspberry Pi Pico port; designing a custom PCB in Altium.

Motorized Wagon | Personal Project, In Progress

- Repurposing a hoverboard as a powered yard wagon by flashing modified field-oriented control (FOC) firmware.

ESP8266 Home Assistant Panel | Personal Project

- Built an ESP8266 touchscreen panel that toggles Home Assistant lights over Wi-Fi via HTTP commands.

WORK EXPERIENCE

Tech Lead | Thrice Agency | Mar 2022 - Present

- Lead development of custom integration software for Smith Douglas Homes, translating client needs into solutions.
- Improve and maintain existing client software and deliver custom projects supporting evolving business needs.
- Coordinate a small development team, timelines, and budgets; work directly with clients to define requirements and resolve technical issues.

Mechanic / Head Mechanic | FatCats | Feb 2025 - May 2026

- Promoted to Head Mechanic within three months, demonstrating technical competence and rapid learning.
- Helped restore 1960s-era AMF 82-70 machines, substantially reducing failures and machine stops.
- Restored largely analog control computers and repaired electrical systems with minimal documentation, addressing faults from years of improper repairs.
- Read electrical drawings and developed mechanical repair and welding skills while restoring aging equipment.

Cell Phone / Electronics Repair Technician | CPR | Jan 2020 - Aug 2021

- Diagnosed electronic hardware faults; performed component-level repairs, soldering, and device restoration.