Tyler Huffmire

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EDUCATION

Brigham Young University Apr 2027
Bachelor of Science: Mechanical Engineering **| Minor**: Korean Provo, UT
GPA: 3.8 | **Scholarships**: Potawatomi Educational; Academic Scholarship | **Awards:** *Dean's List* (x5); *Phi Kappa Phi (Top 7%)*

ENGINEERING INTERNSHIPS

UltraLux Health Aug 2026 - Nov 2026
Product Development Engineer American Fork, UT

- Wrote the assembly, repair, and diagnostic SOP for a 5-technician team, raising production rate an estimated 25-30%
- Diagnosed and repaired 100+ under-counter water purification units (200-300 team-wide), tracking root cause failure modes to separate assembly errors from supplier defects
- Documented recurring failures and recommended design changes to the OEM, leading to a reinforced hydrogen chamber in a new plastic material
- Proposed developing proprietary designs to reduce reliance on supplier IP and reach retail-level reliability

AquiSense Inc. Jun 2025 - Aug 2025
Mechanical Engineering Intern - Contacts: Oliver Lawal, Wes Morin Erlanger, KY

- Designed and built a 10'x12' UV-C-shielding clean room (polycarbonate, 8020 aluminum extrusion, ~$12K) replacing a tarp setup, ensuring a safe environment for 20+ production team members.
- Designed and built a cart storing 12 UV-C lamps (~$16K each), cutting breakage risk and enabling roll-in transport
- Led both projects concurrently in ~10 weeks, running 7 design reviews with the CEO, VP of Operations, and technicians and iterating 8+ times

BYU Engineering Department May 2025 - Present
Teaching Assistant - Design of Mechatronic Systems & Global Leadership Provo, UT

- Teach mechatronic system design, including interrupts, finite state machines, PWM motor control, and IR sensor integration, to roughly 70 students across six lab sections
- Guide students through debugging PIC24-based embedded C projects with servo, DC, and stepper motor control.
- Provided individualized feedback on resumes for 78 students to enhance professionalism and clarity
- Collaborated with a team to give feedback and facilitate discussions on ethics, habits, and effective communication

ACADEMIC PROJECTS

GPS-Denied UAV Navigation Capstone (with U.S. Air Force Academy)

- Developing multidrone communication and sensing to deliver reliable navigation in GPS-denied regions for AFRL

Mars Rover Robot | Light Following Robot | ESP32 Smart Alarm

- Designed a custom PCB and programmed C state machines for line following and IR sensing robot in a team of 4
- Built an Arduino robot with servo-steered photodiode array light following and ultrasonic obstacle detection
- Built an ESP32 alarm with Wi-Fi time sync, speaker playback, and servo-actuated lights over a 15 weeks

ACADEMIC RESEARCH

BYU Multiple Agent Intelligent Coordination and Control (MAGICC)
Undergraduate Researcher Sep 2025 - Present

- Authored a 12-15 page literature review comparing formal verification, runtime shielding, and constrained reinforcement learning for certifying ML-based UAV autopilots
- Built ROS2/ROSflight nodes for simulated waypoint and hallway obstacle-avoidance flight; supported flight tests

SKILLS & INTERESTS

Skills: Python, C/C++, SolidWorks, ANSYS (FEA), ROS2, ROSFlight, FAA Part 107 License, CNC, EasyEDA (PCB design), Composites, PIC24, ESP32, 3D Printing, Onshape, Arduino, Raspberry Pi, Soldering, IoT, Laser Cutting, Woodwork, Excel, Google Sheets, Eagle Scout, U.S. Citizen
Relevant Coursework: Flight Vehicle Design, Design of Control Systems, Mechatronics, Dynamic Systems, Machine Design, Manufacturing Processes, CAD, Computational Methods, Mechanics of Materials, Fluid Mechanics, Measurements, Intro to Electrical Engineering, Material Science, Thermodynamics, Heat Transfer, Differential Equations, Statics