

MATTHEW H. ZHANG

US Citizen • Austin, TX • matthehzhang.github.io • linkedin.com/in/matthew-h-zhang • matthew.zhang@utexas.edu

EDUCATION

The University of Texas at Austin – GPA: 3.52

May 2028

Bachelor of Science in Electrical and Computer Engineering Honors

Bachelor of Business Administration in Canfield Business Honors

Relevant Coursework: Circuit Analysis & Design Honors, Computing Systems Honors, Embedded Systems Honors, Software Design & Implementation Honors, Data Science Honors, Management Information Systems Honors

EXPERIENCE

Hardware Engineer Intern – eve Vehicles Corporation

May 2026 – Present

- Designing a 1 kW power distribution board with current sensing and load switches for power gating idle rails

Venture Analyst Intern – Tess Ventures

Mar 2026 – Jun 2026

- Prepared technical demos and product-facing presentations for engineering and business audiences
- Evaluated robotics startups and provided technical due diligence for investment decisions

Control Systems & Electrical Engineer – Texas Aerial Robotics

Jan 2026 – Present

- Modeled inverted pendulum and TVC system dynamics and implemented PID, MPC, & LQR controllers in Python
- Designing compact AM32-based 30A 4S BLDC motor driver PCB under size and thermal constraints in Altium

Embedded Systems Engineer – GHOST Robotics

Nov 2025 – Present

- Validated custom sensor PCBs and integrated them into tight mechanical assemblies using Onshape
- Redesigned differential I2C sensor bridge PCB with address translation, reducing board area by 40%
- Performed board bring-up and debug by validating power rails and signals with a multimeter and logic analyzer
- Wrote interrupt-based RP2040 sensor polling firmware in C with custom sensor drivers over USB serial

Team Captain & Lead Engineer – BagelBytes Robotics FRC #9400

Dec 2024 – Aug 2025

- Organized a team of 30+ individuals to successfully design, manufacture, and field functioning 125 lb robots
- Mentored 20+ members in CAD & electrical systems; improved team ranking by 1,500+ places during leadership
- Engineered custom CAN bus layout and architecture, reducing match-time electrical failures by 28%
- Designed 100+ custom sheet metal parts and 7 custom-built gearboxes with Onshape

PROJECTS

Inhabit, Open Source Humanoid Teleoperation Rig – Founders, Inc. Off-Season II

Dec 2025 – Present

- Led development of a wearable motion capture system streaming human joint angles at 50 Hz over USB serial
- Designed MCU-based magnetic encoder PCB using RS-485 daisy-chaining, enabling plug-and-play joint modules
- Deployed and validated on Unitree G1 EDU for episodic task collection; redesigning v2 for robustness and UX

Vinyl Record Player Motor Driver Board – Personal Project

Dec 2025 – Present

- Independently designed a 2-layer MCU motor-driver PCB with USB-C PD power negotiation for a brushless turntable
- Designed a custom 12V-to-5V buck converter with local decoupling for a clean MCU and motor supply

1st Place – Genesis x Texas Momentum x Yconic Hackathon

April 2026

- Built a MCU-based wearable AI assistant with face recognition, live STT, and persistent memory of conversations
- Created a pipeline for face tracking, identity matching, and context retrieval across repeated interactions

1st Place – IEEE Robotics & Automation Society, Robotathon Competition

Sep 2025 – Nov 2025

- Led electromechanical design of autonomous competition robot that launched balls with custom flywheels
- Adjusted designs for modularity, allowing for easy sensor iteration and improved maze routing

SKILLS

Technical Skills: Circuit Design, PCB Layout, Firmware Development, Control Systems, Robot Learning, CAD, Git, Debugging, Soldering | **Tools:** KiCad, Altium, LTSpice, MuJoCo, Linux, Onshape, GDB, Oscilloscope, Logic Analyzer, Excel | **Languages:** C, C++, Python, Assembly, R, SQL | **Embedded:** STM32Cube, ESP-IDF, CCSTUDIO, CAN, I2C, SPI, UART, ADC/DAC, BLE

AWARDS

Founders, Inc. Physical AI Hackathon 1st Place (2026) • UT x CSBA x HBA Hackathon 1st Place Track (2026) • Genesis x Texas Momentum x Yconic Hackathon 1st Place (2026) • IEEE RAS Robotathon 1st Place, Software Design Award (2025) • FIRST Robotics Rising All Stars Award (2025) • World's Rookie Inspiration Award, FIRST Robotics Worlds Qualifier (2024)