

# Maaz Ahmed

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## EDUCATION

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**Bachelor of Science, Electrical and Computer Engineering Honors & Mathematics** Dec 2027

The University of Texas at Austin

**Societies/Organizations:** IEEE, UT PGE, Claude Builder, WECE

**Associate of Science** May 2025

Lone Star Community College System | **GPA: 4.0/4.0**

## PROFESSIONAL EXPERIENCE

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**Schneider Electric | Webster, TX** Jun 2026 - Aug 2026

**Incoming SIS Engineering Intern**

- Joining the **Triconex Safety Instrumented Systems (SIS)** team this Summer to assist with **developing, testing,** and optimizing **safety-critical control systems** and hardware.

**Makistry | Austin, TX** Dec 2025 - Apr 2026

**Software Engineering Intern**

- Ported OpenCascade (**industry-standard C++ CAD kernel**) to WebAssembly and built a browser-native BREP modeling engine in **TypeScript** with real-time **Three.js rendering**, enabling **professional-grade CAD**.
- **Implemented 20+ parametric solid modeling operations** (boolean ops, fillet/chamfer, shell, sweep, revolve, extrude-cut, draft, loft) with a feature tree supporting full operation replay, rollback to any history state, and coordinate-space reconciliation between the BREP kernel and renderer for sub-millimeter precision.
- **Designed an AST abstraction layer** bridging an LLM interface with the modeling engine, **translating natural-language prompts** into deterministic replayable CAD operations; validated end-to-end with a **95-test Playwright suite** exercising WASM operations that standard testing frameworks cannot simulate.

## PROJECTS

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**Embedded Game System** Aug 2025 - May 2026

- Designed and fabricated a **custom two-layer KiCad PCB** for a handheld game system on the TI MSPM0G3507 (ARM Cortex-M0+), integrating **DAC audio, SPI LCD, GPIO I/O, ADC sensors, and IR communication**.
- Developed C firmware for a real-time game engine with **SPI-driven graphics at 30Hz, SysTick-driven 11kHz DAC sound synthesis, GPIO interrupt input handling, and UART two-player communication**.
- Designed full schematic with **5-bit binary-weighted R-2R DAC, ST7735R LCD interface, ULN2003A-driven LEDs, and TSOP31438 IR transceiver**; completed PCB layout with star-topology power routing.

**Dual-Node CAN Bus Wheel Speed System** Apr 2026 - Present

- Architecting a **two-node automotive sensing system** where each node independently reads wheel speed via **hall-effect sensors** and broadcasts velocity data over a **shared CAN bus**, mirroring the architecture used in **ABS and traction control systems** in production vehicles.
- Designing two custom PCBs from scratch in KiCad featuring STM32G431 MCUs and **SN65HVD230 CAN transceivers**, with register-level firmware (no HAL) implementing the **CAN 2.0B protocol for inter-node wheel speed data exchange**.

## SKILLS/CERTIFICATIONS

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**Hardware/Software:** Embedded C, Python, TypeScript, ARM Assembly, Git, Data Structures & Algorithms, MATLAB, KiCad, PCB Layout & Routing, Schematic Capture, Soldering, Oscilloscopes, Multimeters, SPI/UART/GPIO, Interrupt-Driven Systems

**Certifications:** Anthropic - Model Context Protocol Advanced Topics, Intro to Agent Skills, Claude Code in Action