Mitchell Oriahi

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EDUCATION

Texas Tech University, Lubbock, TX — Expected Grad. May 2027

B.S. Computer Engineering | GPA: 3.46/4.00 | Accelerated M.S. Electrical Engineering track | President's Honor List

Dean's Honor List | Relevant Coursework: Embedded Systems, Control Systems, Data Structures and Algorithms, Microcontrollers, Network Analysis, FPGA Project Lab, Microprocessor Architecture

PROJECTS

APRS GPS Tracking System, Team Lead, TTU ECE 3334 — Jan 2026 – May 2026

- Designed a GPS tracking system with STM32 NUCLEO-G431RB that transmits packetized position data over VHF/UHF radio
- Built a Bell 202 AFSK software that sends APRS frames through the DAC over DMA and decodes them to carry APRS frames end to end with accurate positioning
- Validated framing, timing, and serial data handling using oscilloscope and UART-based debugging before RF integration

STM32 WAV Audio Player, Solo Design and Implementation — Jan 2026 – May 2026

- Built a FreeRTOS music player on an STM32F429I Discovery board with a TouchGFX touchscreen UI that browses songs on an SD card and supports play, pause, skip, 15 second seek, shuffle, and elapsed time
- Kept playback gap-free with a double-buffered DMA pipeline that refills one half of the audio buffer while the DAC plays the other, clocked by a hardware timer at the file sample rate
- Split the firmware into four FreeRTOS tasks with a mutex guarding SD card access, keeping the touchscreen responsive during playback and recovering automatically when a card is pulled mid-song

Red Raider Combat Robot, Team Lead, TTU ECE 3331 — Aug 2025 – Dec 2025

- Developed MSP430 firmware in C for a 10 lb combat robot with PWM motor control and a 40 ft IR remote link
- Designed a custom PCB with MOSFET weapon drive and overcurrent protection, validated through oscilloscope debugging

EXPERIENCE

Software Engineer Intern, SDET, Christian Brothers Automotive Corporation, Katy, TX — May 2026 – Aug 2026

- Built a canary release system on Azure deployment slots that ramps live production traffic onto a new version from 0 to 25 percent and alerts the deploying engineer, now standard across 7 major services
- Automated cross-service regression testing so publishing a new wheel for shared Python libraries triggers Azure DevOps pipelines that deploy 5 consuming services against it and test 48 endpoints with the new wheel pinned
- Cut shared library release verification to under 5 minutes by routing pipeline results through an Azure Function that organizes passes, failures, and trace logs into a per-service report sent to Slack
- Migrated 4 production level services and APIs from Python 3.10 to 3.13 ahead of an Azure runtime deprecation
- Built a self-updating documentation site covering 46 Azure DevOps projects, refreshed daily from each service repository

Undergraduate Research Assistant, Texas Tech Nano Tech Center, Lubbock, TX — Jan 2026 – Present

- Designed photolithography masks in AutoCAD for two-contact test structures used to measure how semiconductor sample resistance shifts with applied voltage and temperature
- Patterned and deposited gold contacts through photoresist lithography, etching, and development across 15+ documented fabrication runs, improving repeatability for researchers
- Delivered surface topography data to 5+ faculty and student researchers via Profilm3D optical profilometry

Data Engineering Intern, Christian Brothers Automotive Corporation, Katy, TX — May 2025 – Aug 2025

- Automated a manual ingestion process with a Python and Azure Functions pipeline that pulls 10+ new vehicle records weekly from external REST APIs into MySQL and Azure Cosmos DB for the appointment scheduler website
- Cut redundant writes with change-detection logic that inserts only new or modified records, integrating Storage Queues for reliable delivery across environments

TECHNICAL SKILLS

Languages: C, Python, Java, Assembly (AVR), JavaScript, HTML, CSS, Verilog

Embedded: FreeRTOS, Register programming, DMA, interrupts, device drivers, STM32 HAL, CubeMX, TouchGFX, FatFS

Hardware and Protocols: STM32, MSP430, ATmega328P, UART, SPI, I2C, SDIO, AFSK, PWM, PCB design

Tools and Lab: Git, Azure DevOps, CI/CD, MySQL, Cosmos DB, REST APIs, Linux, oscilloscope, LTspice, AutoCAD