RODELPH OSIAS

Houston, TX 77090 | rosias@patriots.uttyler.edu | Willing to relocate to Dallas, TX

PROFESSIONAL SUMMARY

Computer Engineering student graduating December 2026 with hands-on experience in embedded hardware development, analog/digital circuit fundamentals, power conversion, and system integration. Experienced with STM32 ARM Cortex-M microcontrollers, Altium Designer schematic capture and PCB layout (project in progress), UART/SPI/I2C, and bench debugging using oscilloscopes and logic analyzers. Owned power architecture and electrical integration for a multidisciplinary autonomous robotics senior design project; diagnosed and resolved system-level undervoltage failures.

EDUCATION

The University of Texas at Tyler — Houston Engineering Center | Houston, TX
Bachelor of Science, Computer Engineering | Minor: Computer Science | Expected December 2026
Relevant Coursework: VLSI Design (CMOS), Computer Architecture, Operating Systems

ENGINEERING PROJECTS

Autonomous Multi-Agent Tracking System — Senior Design Team | Spring 2026

- Owned ground vehicle electrical integration, power architecture, component selection, and hardware troubleshooting from concept through system testing on a multidisciplinary team.
- Root-caused Raspberry Pi 4 undervoltage resets to motor startup current on a shared supply; redesigned power distribution with a dedicated 7.4 V battery and buck converter regulated to 5.1 V, eliminating observed resets.
- Integrated Arduino Mega2560 and Raspberry Pi using UART for motor control; connected LiDAR sensing, ROS 2 mapping, and YOLOv8/PID tracking for system-level verification.

Light-Activated Sensor System — STM32 NUCLEO-F446RE & Altium Designer | Fall 2026

- Developed embedded C firmware to sample a light-dependent resistor using a 12-bit ADC and control output with hysteresis thresholds; streamed sensor readings over UART for verification.
- Diagnosed and corrected a USART2 configuration fault that prevented serial output.
- Designing a custom PCB in Altium Designer, including schematic capture, component footprints, and board layout (in progress).

STM32 Peripherals & Hardware Debug — Embedded C / Keil MDK | Summer 2025

- Configured and validated UART, SPI, I2C, and GPIO peripherals on ARM Cortex-M; used oscilloscope and logic analyzer measurements to examine digital signal timing.

Digital Logic & VLSI Design — Academic Coursework | 2025–2026

- Designed and analyzed CMOS logic and memory circuits in coursework; developed Verilog/VHDL digital modules and verified functionality through simulation.

Obstacle Avoidance Robot & Ratliff Relay Robotics Competition | 2024

- Performed power calculations and component selection; integrated ultrasonic, IR, and vision sensors with Arduino motor control and debugged hardware during competition.

PROFESSIONAL EXPERIENCE

Transportation Security Officer — Department of Homeland Security / TSA | June 2022–Present

- Perform daily calibration and maintenance checks on screening equipment; identify and document technical anomalies for resolution.
- Follow federal regulations and standardized procedures in a safety-critical environment while maintaining accurate compliance records.

LEADERSHIP

IEEE — UT Tyler Chapter, Secretary | Fall 2024–Present

TECHNICAL SKILLS

Electrical & Hardware Design: Analog/Digital Circuit Fundamentals, Circuit Analysis, Altium Designer (PCB Design in Progress), Schematic Capture, Power Conversion, Buck Regulators, Power Distribution, CMOS/VLSI, Multisim, Soldering

Embedded & Digital: STM32 (ARM Cortex-M), Arduino, Raspberry Pi, Embedded C, C++, Verilog/VHDL (Simulation), ADC, GPIO, UART, SPI, I2C

Test & Verification: Oscilloscope, Logic Analyzer, Hardware Debugging, Root-Cause Analysis, System Integration, Functional Verification

Software & Tools: Python, MATLAB, LabVIEW, Git/GitHub, Linux, ROS 2, AutoCAD, Fusion 360