

ELVIS TANG

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SUMMARY

B.S. in Computer Engineering from Cal Poly Pomona with experience developing microcontroller-based systems involving sensor fusion, signal processing, and peripheral communication (I²C, SPI, UART). Designed and implemented embedded solutions for unmanned ground vehicles in collaboration with Lockheed Martin, focusing on real-time data acquisition and multi-sensor fusion. Skilled in C/C++, embedded Linux, and low-level hardware interfacing with an understanding of firmware security, threat mitigation, and secure communication protocols. Passionate about building reliable and secure embedded and IoT systems.

EXPERIENCE

Stand Lead / IT

August 2024 – Present

Aramark

Anaheim, CA

- Managed inventory for 50+ items, patched POS systems, and ensured 100% compliance with health and safety standards.
- Delivered high-quality customer service, resolving 20+ issues per shift and increasing guest satisfaction scores by 15%.
- Supervised daily operations for a concession stand serving 1,000+ guests per shift, ensuring efficient service and smooth team coordination.

Instructor

November 2023 – Present

Coding Minds Academy

Irvine, CA

- Instructed 10+ students in Python, JavaScript, and game development, improving student project completion rates to 100%.
- Mentored students on projects aligned with cybersecurity and hardware to develop best practices, boosting retention.
- Designed age-appropriate curricula introducing Git, secure coding, and real-world software tools, resulting in higher engagement for student-based projects in software and hardware engineering.

Sponsored Embedded Systems Project Lead

August 2022 – May 2023

Lockheed Martin

El Segundo, CA

- Partnered with Lockheed Martin engineers to optimize algorithms, reducing processing latency of a UGV by 25%.
- Implemented and tested UART, SPI, and I2C protocols, reducing hardware/software interface bugs by 30%.
- Developed and debugged embedded C/C++ software for an unmanned ground vehicle, increasing system uptime and communication reliability by 50% making the turning maneuver 100% more efficient.

PROJECTS

Sensor Fusion Unmanned Ground Vehicle *Lockheed Martin*

- Developed autonomous unmanned ground vehicle (UGV) integrating LIDAR, stereo camera, ultrasonic sensors, IMU, and wheel encoders with Raspberry Pi and Arduino platforms to enable reliable navigation in challenging terrains through complementary sensor fusion.
- Implemented Kalman filter algorithms for data stabilization and fusion, processing multi-sensor inputs to minimize errors from environmental noise, achieving accurate object detection and distance measurements within ± 10 cm across varied surfaces like reflective mirrors and sound-dampening fabrics.
- Tested UGV performance in obstacle avoidance trials and simulated environments, demonstrating enhanced system reliability by overcoming individual sensor limitations, with findings showing successful real-time classification of objects up to 50 cm and navigation without collisions in dynamic settings.

Identification of Statistically Significant Factors Contributing to Hit-and-Run in Car Accident *Cal Poly Pomona*

- Analyzed 5-year HSIS crash dataset (driver, roadway, vehicle, environment) using R to identify hit-and-run predictors.
- Built binary/multinomial logit regression models with backwards deletion and AIC to isolate significant variables.
- Confirmed severity, light conditions, and intersection population as key factors at 95% confidence via diagnostic plots.

EDUCATION

Bachelor of Science Degree in Computer Engineering *California State Polytechnic University, Pomona*

Security+ SY0-701 *CompTIA*

Google Cybersecurity Professional Certificate *Coursera*

Mathematics Associate in Science Degree for Transfer (AS-T) *Cypress College*

Liberal Arts Associate in Arts Degree with an Area of Emphasis in Math and Science *Cypress College*

TECHNICAL SKILLS

Embedded Systems: Arduino, ESP32, STM32, ARM Cortex-M, Embedded Linux, FreeRTOS

Firmware Development: C/C++, Python, Assembly, UART/SPI/I²C, ISR, Device Drivers, Bootloaders

Hardware Design: PCB Layout, KiCad, Oscilloscope, Logic Analyzer, Circuit Debugging

IoT & Networking: MQTT, TCP/IP, Bluetooth LE, Wi-Fi, Secure Communication, OTA Updates

Control Systems: PID, Motor Drivers, Sensor Fusion, Real-Time Data Acquisition

Programming & Scripting: Python, PowerShell, Bash, JavaScript, C, C++, Lua, MATLAB, R

Development & Tools: AWS, Azure, Docker, Git, GitHub, Jira, Postman, MongoDB, Nessus, Metasploit