CRISTIAN SALITRE

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SUMMARY

Software engineer with 1+ year of experience in embedded systems development. Currently working on computer vision integration and firmware R&D projects @Honeywell, with previous intern experience @Oxit developing applications and technical documentation for multi-connectivity systems.

EXPERIENCE

Honeywell   Charlotte, NC
Software Engineering Intern   *June 2025 – Current*

- Migrating YOLOv8 computer vision system from laptop to embedded smart camera prototype deployment. Implementing camera driver integration with Vimba X SDK, optimizing for edge inference performance, and using Streamlit application web interface.
- Evaluating NXP i.MX93 SoC (Arm Cortex-A55/M33) feasibility for Honeywell's barcode scanning system integration, analyzing Zephyr RTOS compatibility with NXP i.MX93 for camera porting.
- Executing comprehensive test validation for OEM scanning products across multiple device configurations and barcode symbologies, documenting results and managing test cases through Jira workflow. Evaluating potential automation to help reduce time for testing.

Oxit   Charlotte, NC
Embedded Software Engineering Intern   *March 2025 – June 2025*

- Redesigned and updated user manuals, datasheets, and spec sheets for Multi-Connectivity Module (MCM) EVK, cross-referencing schematics to verify GPIO mappings, power specifications, and sensor components for accuracy.
- Implemented visual dashboard on ESP32-S2/S3 Feather TFT for LoRaWAN/Sidewalk dual-connectivity application, displaying real-time connection status, protocol modes (BLE/FSK/CSS), signal measurements (RSSI/SNR), and sensor data to replace serial monitor dependency.
- Conducted extensive research and hands-on work with SX1262 radio, Silicon Labs EFR32MG24 MCU, and various flashing/debugging tools (SWD, JTAG, ST-Link).

SKILLS

Protocols & Interfaces:	LoRaWAN, BLE, I2C, SPI, UART, SWD, MIPI-CSI
Platforms & RTOS:	ESP32, TI-MSP430, ARM Cortex-A55/M33, Zephyr RTOS
Languages:	C/C++/C#, Python, MATLAB, Bash
Tools:	Vimba X, Git, ESP-IDF, PyTorch, OpenCV, Pylon, Streamlit

PROJECTS

Asset Tracking and Anti-theft System - Senior Design Project   January 2024 – December 2024

- Developed dual-core ESP32-S3 firmware using ESP-IDF with real-time I2C peripheral control, BLE communication protocols, and interrupt-driven security breach detection system.
- Developed Flutter-based Android application for wireless device management with real-time data monitoring and control interface.
- Co-designed 2-layer PCB in Altium Designer with size and cost optimization. Successfully delivered complete system PoC to industry sponsor DP Containers following year-long development cycle.

Brain Tumor Segmentation with CNNs   April 2024 – May 2024

- Developed CNN encoder-decoder models for automatic brain tumor detection in MRI scans. Demonstrated that simpler architectures achieved better segmentation performance than complex ResNet models on medical imaging data.

EDUCATION

North Carolina State University   Raleigh, NC
Master of Science in Electrical Engineering   *Expected – May 2027*

University of North Carolina at Charlotte   Charlotte, NC
Bachelor of Science in Computer Engineering — ML Concentration   *December 2024*