Nolan Tuttle

(971)-320-9557 | nolantuttle@gmail.com | https://linkedin.com/in/nolan-tuttle-07295830a/
https://github.com/nolantuttle | https://nolantuttle.com/

Summary

Detail-oriented Embedded Systems Engineer with hands-on experience in microcontrollers, hardware-software integration, and Linux-based systems. I am seeking opportunities in embedded software and IoT solutions, and in SoC Systems Engineering.

Technical Skills

Languages: Embedded C, C++, Python, VHDL, Java,
Platforms: ARM Cortex-M, ESP32, Raspberry Pi
Protocols: GPIO, I2C, SPI, UART

Professional Experience

Summer Externship   May 2025 – August 2025

- Completed externship developing proof-of-concept for automatic multicast tunneling between Linux machines using Linode's cloud computing platform to provision VMs and simulate multicast UDP traffic using smcroute, iperf, and Ubuntu's AMT module.
- Wrote Bash scripts to configure tunnel endpoints and analyzed network performance characteristics over private VLAN and public internet.

Research Intern   Fall 2025 – Present

Grand Canyon University, Canyon Artificial Intelligence Research   *Phoenix, AZ*

- Working in a team of 5 engineers to deliver a robot prototype navigating with strictly computer vision; no LiDAR or GPS.
- Implemented a Raspberry Pi 5 controller with multiple cameras for stereovision, assisted development of depth-based classification for >50% CPU usage reduction. Responsible for branding the Autonomous Image-based Machine-learning (AIM) research group.

Projects

GaggiaBerry - IoT Espresso Machine Controller (https://github.com/nolantuttle/GaggiaBerry)   June 2025 – Present

- Built custom controller on Raspberry Pi Zero 2 WH with I2C LCD, K-type thermocouple ADC, and digital water level sensors for precise real-time monitoring. Added multi-threaded data handling with synchronization to ensure reliable, deadlock-free operation across sensors.
- Migrating performance-critical logic from Python to C using memory-mapped GPIO, reducing response time significantly for temperature regulation.
- Deployed autonomous brewing service on Linux with auto-start, achieving seamless IoT integration and consistent espresso extraction.

Pager - A Virtual Memory Manager (https://github.com/nolantuttle/VirtualMemoryManager)   March 2025

- Implemented a simplified virtual memory manager in C, simulating logical-to-physical address translation using page tables.
- Mapped logical pages to physical frames and handled reading/writing memory pages between input and output files for demonstration.

Education

Grand Canyon University, Phoenix, AZ

B.S. Software Engineering   *Fall 2022 – Expected Graduation April 2026*

Relevant Coursework:

- Embedded Systems
- Digital Logic and Design
- Embedded Systems II
- Computer Architecture
- Operating Systems
- Algorithms and Data Structure