Justin Winn

(703) 488-8242 | justinwinn003@gmail.com | McLean, VA | jwinn03 | Birthright Citizen of the U.S.

Education

BSc in Computer Engineering | Virginia Tech | May 2025
Secondary Major: Bachelor of Arts in Music (Performance)
3.86/4.0 GPA - Dean's List with Distinction, Fall 2021 – Fall 2024

Experience

Embedded Systems Intern – Blue Avionics **May 2024 – July 2024**

- Defined software specifications guided by customer requirements for an active-pixel sensor interface
- Designed and validated embedded RTOS software in C and test suite in Python using Agile methods
- Led creation of presentations with teammates to demonstrate progress to customer and industry
- Delivered high documentation quality and organization, ensuring a smooth hand-off

Undergraduate Researcher – Virginia Tech for Smithfield Foods **August 2024 – Present**

- Led Python development for a system to estimate weight of livestock using AI computer vision
- Optimized machine learning output by improving data pre- and post-processing techniques
- Ensured ease-of-use and reliability of system by consulting and testing with livestock managers
- Delivered an integrated system that saves 5+ hours of labor each week putting livestock on scales

Extracurriculars and Projects

IP Camera **November 2023 – January 2024**

- Constructed a RPi-based camera which can pan with a servo, controllable through a web interface.

Center for Bio-Inspired Science and Technology **January 2024 – May 2024**

- Contributed electrical work in a team of ~20 students developing a bat-inspired robot with sonar.

TEK Robotics Club **September 2021 – April 2022**

- Implemented highly responsive C++ robotics control systems competitive autonomous vehicles.

DC-DC Battery Charger and Bluetooth Thermometer **January 2023 – May 2023**

- Designed and built a working prototype for an Arduino-based wireless temperature probe.
- Developed hardware/software, presentations, and documentation closely with a teammate.

File Copier Utility **July 2025 – Present**

- Developed a portable, easy-to-use utility for copying files written in C++, with a Qt-based GUI.

ESP32 Bluetooth Pedal **January 2025**

- Built a wireless ESP32-based Bluetooth pedal 33% more cost effectively than market alternatives.

Skills

Programming: C++, C, Python, Java, and Verilog; Qt, FreeRTOS, and Pytorch; VS, VSCode, Neovim
Hardware: STM32, ESP32, and Raspberry Pi; FPGAs; Oscilloscopes, Logic Analyzers; Servos and Sensors
Software: Office Suite, Teams; Git, LaTeX; LTspice, Ansys ED, ModelSim, Altium Designer; Unix-like systems
Other: SQL (MySQL), Soldering, Circuit Design, Docker, Image Processing, and Computer Networks