

Vien Tran

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EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY | Atlanta, GA

Expected: May 2026

B.S. in Computer Engineering | Concentration on Software Systems and Computer Hardware

Projects

Robotic Telecontrol Glove | C++, *ESP-32*, *Arduino*, *Servo*, *VR Integration*

Spring 2025

- Developed embedded firmware for real-time VR interaction, integrating a 3D-printed robotic hand with haptic feedback for immersive virtual environment control.
- Engineering a telecontrol glove system using 5 potentiometers connected via tension string to measure finger motion, calibrating via custom calibration button.
- Integrated tactile feedback by implementing 5 feedback buttons on the robotic hand, triggering a corresponding servo on the glove to simulate physical contact.

RISC-V Processor Design | *CPU Architecture*, *RISC-V*, *Verilog*, *ModelSim*

Fall 2024

- Designed and implemented a 5 stage pipelined RISC-V processor in System Verilog, supporting instruction-level parallelism and modular microarchitecture design.
- Improved execution throughput by 6.44x using hazard mitigation techniques including pipeline stalling, data forwarding, and dynamic branch prediction.
- Validated processor functionality with architectural simulation tools, performing register tracking, waveform analysis, and timing verification to ensure accurate pipeline execution.

Servo FPGA Peripheral Design | *VHDL*, *Assembly*, *Quartus II*

Spring 2024

- Designed and implemented an FPGA-based servo peripheral capable of controlling 5 devices simultaneously, improving hardware scalability by 400%.
- Documented system architecture, signal timing, constraints, and interfacing methodology, while addressing challenges in concurrent control and timing synchronization.

Embedded Game System Development | *C*, *Arduino*, *Embedded Systems*

Summer 2024

- Engineered a real-time space shooter game on a custom embedded platform, integrating event-driven input handling and dynamic UI elements for enhanced user interactivity.
- Optimized core game loop for performance, reducing execution latency and achieving a 50% improvement in load times through memory-efficient data structure and loop unrolling.

EXPERIENCE

Founder & Embedded Systems Engineer

Summer 2024 - Present

Strike | *Georgia Institute of Technology Create-X* | *Atlanta, GA*

- Developed a smart boxing tracker using embedded sensors and pressure transducers capable of capturing forces up to 109 Pa, with Bluetooth Low Energy transmission to a mobile app.
- Refined hardware prototype through iterative testing, sensor calibration, and latency minimization to optimize data accuracy and enhance system responsiveness.

Drone System Technician - Research Program

August 2024 - December 2024

Georgia Institute of Technology VIP Program | *Atlanta, GA*

- Refined and optimized embedded drone hardware for long-range delivery systems, improving flight performance and communication range by 20% through power efficiency and system tuning.
- Diagnosed and repaired PCB-level electric faults, performing component-level testing, signal integrity analysis, and real-time debugging to improve overall system robustness.

SKILLS

Programming: Verilog, VHDL, C, C++, Java, Python, RISC-V, MIPS, JavaScript

Hardware: FPGAs, Oscilloscopes, Logic Analyzers, ARM mbed

Software: Quartus II, NI LabVIEW, MS Office, Amazon AWS, React.js, Github