Marvin Rivera Martinez

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Education

University of Virginia **Expected Graduation: May 2026**
B.S. in Computer Engineering, Minor in Data Science, GPA: 3.48/4.0 *Charlottesville, VA*

- **Honors:** Dean's List (Spring 2023, Spring 2024, Fall 2024, Spring 2025), QuestBridge National Scholar
- **Relevant Coursework:** Operating Systems (CS4414), Software Engineering (CS3240), Machine Learning (CS4774), Data Structures & Algorithms (CS2100), Computer Systems & Organization II (CS3130), Cybersecurity (CS3710), Computer Architecture & Design (ECE4435), Internet of Things (CS4501)

Technical Skills

Languages: Java, Python, C/C++, JavaScript, SQL (PostgreSQL), HTML/CSS, Verilog
Frameworks & Libraries: Django, React, Next.js, Zephyr RTOS, nRF Connect SDK
Developer Tools: Git/GitHub, Docker, Keil, KiCad, ModelSim, STM32CubeIDE
Cloud & Databases: AWS (S3, EC2), Docker, RESTful APIs, PostgreSQL, SQLite, CI/CD concepts

Engineering Projects

SkiRentals Web Application | *Software Architect & Lead Developer* **Spring 2025**

- Architected a cloud-ready Django web application with RESTful API design, reducing deployment complexity by 60%
- Engineered secure user authentication via Google OAuth2 and implemented role-based access control to manage user permissions
- Integrated AWS S3 for scalable media storage and documented deployment runbooks for team handoffs

RentScan - Wireless NFC Tag Rental System | *Project Lead (IoT Course)* **Spring 2025**

- Led a 4-person team in an Agile environment, managing the project lifecycle from scope to delivery
- Developed concurrent firmware in C using Zephyr RTOS for BLE data transmission and NFC tag reading
- Designed a low-power system architecture for reliable communication between multiple nRF52840DKs

RISC-V CPU with Memory-Mapped UART | *Lead Designer (Computer Architecture)* **Fall 2024**

- Designed and implemented a complete 32-bit, single-core RISC-V (RV32I) processor using Verilog
- Engineered a custom memory-mapped UART peripheral for serial communication with external devices
- Conducted extensive verification via ModelSim, writing testbenches to ensure architectural correctness

Candy Ninja Game | *Lead Developer & System Integrator* **Spring 2025**

- Developed a real-time embedded game on a TM4C123 MCU using an RTOS to manage concurrent threads
- Engineered the core game logic, including state management, hardware peripheral I/O, and collision detection
- Implemented a deadlock prevention algorithm to ensure stability between concurrent processes

Leadership & Experience

University of Virginia | *Teaching Assistant, Computer Systems & Organization II* **Jan 2025 - Present**

- Mentored 50+ students in advanced computer systems topics including C memory management, concurrency, networking, and performance optimization
- Clarified complex concepts during weekly laboratory sections and office hours

Solar Car Team at UVA | *Hardware Integration Engineer* **Sep 2023 – Present**

- Collaborated in an Agile team to design and fabricate PCBs for telemetry and steering wheel systems using KiCad
- Compiled and verified BOM for all team hardware, identifying over 200+ unique electronic components for procurement.

SHPE UVA Chapter | *Active Member & Peer Mentor* **Sep 2022 – Present**

- Selected as a UVA representative for the 2024 SHPE National Convention based on technical project contributions and leadership
- Guided a first-year Computer Engineering student, providing academic guidance, career advice, and support for their transition to university life.