

Argenis Y. Vélez Álvarez

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Computer Engineering Student | Software Development | IT | Cybersecurity

EDUCATION

Polytechnic University of Puerto Rico, San Juan Campus **Graduation: May 2027**
Bachelor of Science in Computer Engineering, GPA: 3.5
Relevant Coursework: Software Engineering, Ethical Hacking, Computer Forensics, Data Structures, Operating Systems, Computer Architecture, Microcomputer Interfacing, Database Systems (SQL), Advanced Programming (Python), Data Communications

SKILLS

Languages: Python, TypeScript, JavaScript, C++, C, SQL, VHDL
Web & Backend: React, Vite, FastAPI, REST APIs, JSON, CRUD operations, frontend-backend integration
Databases & Testing: PostgreSQL, MySQL, SQL joins, pytest, isolated test databases, debugging
Tools & Platforms: Git, GitHub, Linux, SSH, Docker, Microsoft Azure, VS Code, PyCharm, Vivado, ISE, VirtualBox
Cybersecurity & Systems: Network security fundamentals (TCP/IP, DNS, HTTP), access control, phishing awareness, vulnerability assessment, system hardening, hardware-software integration, technical documentation, technical support.

PROJECTS

Adaptix - Personalized Workout Application (React, TypeScript, FastAPI, PostgreSQL, pytest) **San Juan, PR**
Full-stack Developer *September 2026 - Present*

- Built a full-stack fitness application that generates personalized workout programs from user goals, experience level, training frequency, and available equipment.
- Developed RESTful backend endpoints for workout generation, persistence, retrieval, and deletion using FastAPI and PostgreSQL, including relational queries and SQL JOINS.
- Created a responsive React + TypeScript interface with reusable components, Fetch API integration, hooks, local storage, saved-program management, loading states, and user feedback.
- Implemented automated backend testing with pytest and a separate test database; achieved 24 passing tests while iterating through feature and database changes

Smart Spot - Smart Parking System Capstone (Python, MySQL, ESP32) **San Juan, PR**
Full-Stack Developer *August 2026 - Present*

- Developing an IoT-based smart parking system with an ESP32 microcontroller, LCD display, and web dashboard, including RFID-based access control for device authentication.
- Building backend REST APIs and a MySQL data layer to handle real-time IoT device communication, applying access-control principles relevant to smart/connected device security.

Embedded Systems Vending Machine (C, Tiva C TM4C123) **San Juan, PR**
Embedded Systems Developer *March 2026 - May 2026*

- Designed, assembled, programmed, and tested an embedded vending-machine system utilizing the TM4C123 microcontroller.
- Integrated keypad inputs, LCD displays, switches, and hardware-software integration.

Real Estate Manager Application (Python, MySQL, PyQt5) **San Juan, PR**
Software Developer *March 2025 - May 2025*

- Developed a Python-based property management application using PyQt5, implementing a graphical interface for viewing and managing property information.
- Integrated a MySQL relational database to store, query, retrieve, and manage structured property data.
- Applied software engineering practices including modular development, debugging, database integration, and version control using Git and GitHub.

WORK EXPERIENCE

Velez Metal Contractor **Hatillo, PR**
Technical Assistant *June 2022 - July 2023*

- Assisted with computer troubleshooting issues involving hardware-software integration.
- Utilized MyPlasmaCNC software to input design specifications, manage material data, and produce precision cuts on stainless-steel and aluminum, demonstrating proficiency in data entry and technical software operation.

CERTIFICATIONS

- Google Cybersecurity Professional Certificate *In Progress*
- Intro to Cybersecurity - CodePath.org *June 2026*
- Undergraduate Certificate in Cybersecurity - PUPR *May 2026*