Felipe Campoverde

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EXPERIENCE

Chief Engineer & Software Developer: CroQuest | VT CRO | Blacksburg, VA   *March 2025 - Present*

- Engineered a custom educational handheld game console using ESP32-WROOM, SD card, and BLE
- Wrote 5,000+ lines of C/C++ to develop 8+ retro-style games including Snake, Pong, Tetris, and Tic Tac
- Designed and implemented Bluetooth multiplayer logic, asset rendering, and UI feedback for each game

Cyber Security Instructor | Virginia Tech | Blacksburg, VA   *May 2024 - August 2024*

- Taught core cybersecurity concepts such as encryption, network security, and ethical hacking to school students
- Explained security topics into accessible lessons, fostering early interest in cyber defense and ethical computing

LEADERSHIP

Chief Engineer - CroQuest, VT Competitive Robotics Organization   *September 2024 - June 2025*

- Led software development across multiple student-led robotics projects, guiding system design and implementation
- Mentored team members and assisted in preparing for regional and national robotics competitions

Student Assistant Manager | Virginia Tech | Blacksburg, VA   *January 2024 - Present*

- Supervise student staff, enforce safety protocols, and ensure smooth day-to-day operations
- Provide bilingual (English/Spanish) support to staff and customers in high-paced service environments

Peer Mentor, Ceed | Virginia Tech | Blacksburg, VA   *September 2024 - Present*

- Supported first-year engineering students through workshops, academic mentoring, and study group facilitation

EDUCATION

- ***Bachelor of Science in Computer Science · GPA: 3.0 · Blacksburg, VA***   *Expected May 2026*

SOFTWARE PROJECTS

Full-Stack Portfolio Website (React, JavaScript, HTML/CSS, Node.js, MongoDB, WebGL, Netlify, Blender)
- Built a dynamic web app to visualize datasets via interactive charts (bar, pie, scatter) and coordinated views
- Integrated file import/export, axis configuration, and responsive UI for polished user experience
- Learn more about Felipe Campoverde

Autonomous Car - VT CRO (C++, Python, ROS, RVIZ, Linux, XML, Git)
- Developed autonomous navigation with SLAM using ROS2 and Gazebo
- Integrated hardware sensors (LiDAR, camera, Arduino) to build a fully autonomous robotics platform

Multithreaded Fork/Join Threadpool, Concurrency, Work-Stealing, Task Queues (C)
- Designed a high-performance threadpool supporting dynamic task distribution and parallel execution
- Implemented thread-safe queues and synchronization using condition variables and mutexes

SKILLS

- **Languages** C, C++, Python, Java, JavaScript, HTML, CSS
- **Web & Full-Stack Development** React.js, Zustand, Node.js, Express, MongoDB, REST APIs
- **Embedded & Robotics** ESP32, Arduino, PlatformIO, Bluetooth (BLE), ROS2, URDF, RViz, Gazebo, LiDAR, RealSense
- **Tools & Platforms** Git, Linux, VSCode, Netlify, Blender, SD Card Interfaces, WebGL