

Cristopher J. MARTE MARTE

cjm2301@columbia.edu | +1 401-536-6272

[Github](#) | [Linkedin](#) | [Portfolio](#)

EDUCATION

Bachelor of Science - Computer Engineering

Columbia University

Aug 2022 - May 2024

New York, NY

Bachelor of Science - Applied Physics

Providence College

Aug 2019 - May 2024

Providence, RI

COURSES

Software Data Structures in Java | Advanced Programming | Computer Networks | Embedded Systems | Accessible UI

Hardware Integrated Circuits | Signals & Systems | Computer Systems | Systems-On-Chips | Advanced Logic Design

SKILLS

Programming Languages Python | Java | C++ | C | OCaml | JavaScript | HTML | CSS | | MATLAB

Technologies Linux/Unix/RHEL | Github | Vscode | AWS | Azure | React.js | Flask | iOS | Android

EXPERIENCE

Columbia University

Computer Assistant

September 2023 - May 2024

New York, NY

- Assisted with the setup, configuration, and maintenance of computers, printers, scanners, and other hardware devices across campus. Perform routine maintenance and repairs as needed.
- Provided technical support for classroom and event audio/visual equipment, ensuring that all devices are functioning properly and are set up according to event requirements.
- Staff the IT help desk and respond to user inquiries via phone, email, or in-person.

Rhode Island Department of IT

Network Engineer seasonal Intern

June 2023 - September 2023

Warwick, RI

- Participated in the planning and execution of network upgrades and expansions, including hardware installations and software updates.
- Assisted in the implementation of network security measures, including configuring firewalls, VPNs, and intrusion detection systems to protect against unauthorized access and cyber threats.
- Analyzed network performance data to identify bottlenecks and optimize network performance through tuning and configuration adjustments.

NOTABLE PROJECTS

Snake on FPGA

Embedded Programming

Jan 2024 - May 2024

New York, NY

- Worked as part of a team to design a grid-based Snake game using FPGA, integrating hardware (SystemVerilog) and software (C) components for real-time gameplay on a VGA monitor.
- Configured and managed FPGA modules for VGA signal generation, implemented a 40x30 tile grid display, and created game logic for snake movement, collision detection, and score calculation.
- Utilized Avalon Bus for seamless hardware-software communication, integrated PS5 controller for user input, and conducted extensive testing and optimization to ensure smooth and responsive game performance at 60 frames per second.

Decentralized File Storage System using Blockchain

Computer Networking

Jan 2024 - May 2024

New York, NY

- Collaboratively developed a decentralized file storage system utilizing a peer-to-peer blockchain network, enhancing data integrity and security through distributed ledger technology.
- Implemented key functionalities including file creation, appending, and deletion, integrated with a Flask web interface for user-friendly interactions.
- Ensured system resilience by developing and testing mechanisms for blockchain synchronization, mining, and handling forks, demonstrating robust protection against invalid transactions and data modifications.

Rayquaza Programming Language

Programming Languages & Compilers

Jan 2024 - May 2024

New York, NY

- Part of a team that created Rayquaza, A high-level, dynamically typed programming language inspired by Python, aimed at simplifying coding for both beginners and advanced users by removing indentation requirements.
- Implemented the language's compiler using OCaml, featuring components like lexical analysis, parsing, abstract syntax tree (AST) generation, semantic analysis (SAST), and LLVM-based intermediate representation (IR) generation.
- Designed versatile language features (e.g., numeric operations, conditionals, loops, functions) and performed rigorous testing to ensure robust compiler functionality and error handling.