Carlos Lopez

Email | Website | LinkedIn | Github

Education

Boston University Boston, MA
Bachelor of Science in Computer Science and Physics *Sept. 2019 – May 2022*
HSF Scholar, Upsilon Pi Epsilon Member

Technical Skills

Languages: Python, Javascript, Java, C/C++, Rust, Solidity, SQL, Lua, Ocaml, Fortran
Web Development: React, Next.js, Tailwind, Node.js, Bootstrap, jQuery, Flask, Django
Data Science: Pandas, NumPy, Matplotlib, Pillow, OpenCV, Pytorch, Selenium, PyAutoGUI
Tools: Git, Docker, Firebase, VS Code, Ghidra, Linux, AWS, Redis, Kali, Kubernetes

Experience

Teacher Assistant for Information Security January 2022 – May 2022
Boston University *Boston, MA*
- Held weekly labs graded papers, and answered homework and course questions through Piazza
- Helped students understand attacks, protocols, and their vulnerabilities like MITM, CSRF, BGP, and ARP

Computer Assistant/Programmer 2019 – Present
Boston University IS&T Service Desk *Boston, MA*
- Troubleshooted, maintained, and solved the issues affecting the technology of the BU community and its facilities
- Kept track of daily phone, in-person, and email client interactions through the ServiceNow ticketing system
- Managed admin groups and research software, along with its licensing and renewal

Data Scientist August 2020 – May 2021
Blinkah *Boston, MA*
- Built GPS software to detect pedestrians, ongoing traffic, and neighboring car lanes with machine learning and OpenCV in Python by communicating and working alongside 8 students for enhanced car safety ratings.
- Filtered out images with a vanishing point and used image multiplication along with Hough transform to isolate lanes for continuous lane detection, adding additional lanes to the system for enhancing detection rates by 66%

Projects

Crypto Markowitz Website | *Firebase, Bootstrap, Flask, Pandas, CoinGecko API*
- Implemented website that allows anyone to provide a list of cryptocurrencies and in return get the suggested optimal investment distribution according to Markowitz Portfolio Optimization Theory
- Used Flask for backend, Pandas, and Numpy for manipulating crypto price data, Scipy for optimization of parameters and minimization of loss, and Matplotlib for making the interactive graphs served to the user

SQL Table Editor | *Tkinter, PyQT5, SQL*
- Delivered this commission promptly to a client who was seeking an application that would enable him and his colleagues to manually edit cells in the tables within their SQL databases without the need to write SQL queries.
- Hence, this easily modifiable Python-based table editor updates databases in real-time, removes the need for SQL, and is compatible with various database types, such as SQLite, MySQL, ODBC, PostgresSQL, and MariaDB.

Nutri-Snap | *Tensorflow, React Native, Flask, NodeJS*
- Collaborately made React Native app that used Tensorflow to recognize food items from phone camera in order to return their nutritional values
- Project was entirely made in two days and won first place out of 56 teams at Beyond Code remote hackathon

Interpreter | *Ocaml*
- Designed and constructed an interpreter in Ocaml supporting functions, custom syntax, loops, and conditionals in order to apply functional programming and along with grammatical parsing and lexing

Noteworthy Classes Taken

Algorithm Analysis, Data Structures, Quantum Computing, Distributed Systems, Network Security, Malware Hunting and Reverse Engineering, Functional Programming, Methods for Quantitative Finance, Statistical Thermodynamics