Farouq Syed Abdali

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Education

Carleton University   Ottawa, ON
Bachelor of Computer Mathematics   *Sep. 2022 – Apr. 2026*
- **Activities**: Carleton Student Engineering Society, Carleton Planetary Robotics Team, IEEE, Systems and Computer Engineering Society
- **Relevant Coursework**: Discrete Structures I & II, Data Structures and Algorithms, Linear Algebra

Technical Skills

Languages: Python, JavaScript, TypeScript, MySQL, Java, C, HTML/CSS
Frameworks: React, Node.js, Vue, Flask, Tkinter
Developer Tools : Git, Docker, Google Firebase, VS Code, Visual Studio, PyCharm
Certifications: Microsoft Azure AI Fundamentals

Experience

Software Engineer Intern   Sep 2024 – Present
Upcoming Hedge Fund   *New York, NY*
- Spearheaded the development of proprietary software using **Python** to automate a conceptual mathematical model from research papers, enabling large-scale simulations.
- Partnered with 4 analysts and mathematicians to deploy the model using **NumPy**, executing **2 million** simulations daily, boosting analysis efficiency by **80%**.
- Utilized **Matplotlib** and **Tkinter** to develop a graphical user interface (GUI), enhancing data visualization and user interaction for end-users.
- Integrated historical stock market data and applied statistical methods to validate simulation results against actual market bottoms, ensuring model reliability and accuracy.

Projects

SwiftShare | *Python, Socket, Network Architecture* ⌨
- Developed a distributed Peer-to-peer (P2P) file-sharing system using the TCP/IP networking stack that allowed decentralized file transfer over **10+** nodes.
- Utilized multi-threading to handle **50+** concurrent file transfer requests with enhanced network efficiency and maintained high performance under load.
- Implemented dynamic peer management to allow nodes to join/leave the network within 2 seconds and maintain a list of **10+** peers using real-time broadcasting.
- Designed effective file chunking and reassembly, splitting large files into 512-byte chunks to be transferred optimally, ensuring **0%** loss in reassembly.

RetailVerse | *Javascript, React, MySQL, Node.js* ⌨
- Developed a responsive full-stack POS web application with **React** on the front-end and **Node.js/Express** for the back-end, leading to a 25% increase in transaction processing speed.
- Designed and managed a **SQL database** for efficient handling of transactions, product management, and administrative functions.
- Engineered a Firebase-based security module for robust user authentication and admin control, reducing unauthorized access incidents by **100%**.

ChatterBox | *Javascript, React, Node.js, Firebase* ⌨
- Engineered a real-time chat application using **React** for the front-end and **Node.js** for back-end API services.
- Leveraged **Firebase** for sophisticated user authentication and live data handling, enabling real-time messaging and session management for **150+** active users without compromising performance.
- Crafted a responsive UI with React, enhancing user experience and interactivity across various devices and platforms.
- Executed unit and integration tests that prevented **10+** major issues from reaching production, ensuring seamless functionality and reliability.