AHMAD SHAHZAD CHOUDHARY

2608 Pickett Branch Rd, Cary, NC 27519 | +1 (217)-220-6093 | ahmad.choudhary@duke.edu

EDUCATION

DUKE UNIVERSITY   *Durham, NC*

B.S. in Computer Science & Finance (Concentration in AI/ML)

Relevant Coursework: Data Structures & Algorithms, Design & Analysis of Algorithms, Computer Architecture, Discrete Mathematics, Proof-Based Linear Algebra, Advanced Multivariable Calculus, Probability, Elements of Machine Learning, Databases

EXPERIENCE

KOTWAL RESEARCH LABS (DARK MATTER PARTICLE PHYSICS)   *Durham, NC*

Research Assistant   *Sep 2023 – Jun 2024*

- Learning unsupervised AI integration to train models to accurately predict decaying particle's paths and movements.
- Coding in **C/C++** to convert code into physical microchips while maintaining efficiency in runtime and costs for the optimal production.

CENTER FOR VIRTUAL IMAGING TRIALS   *Durham, NC*

Research Assistant   *Nov 2023 – Jun 2024*

- Collaborated with an interdisciplinary team to integrate **FEBio** tool into research workflow, streamlining model creation process and reducing production time by 30%.
- Implemented advanced **C++** and **Python** scripting techniques to create realistic lung models for simulation, improving accuracy compared to previous models.

TECHNOLOGY STUDENT ASSOCIATION   *Oklahoma City, OK*

Chapter President   *Aug 2018 – May 2023*

- Utilized cloud hosting on **AWS** and developed the front end using **React-Native** and **JS** to ensure seamless scalability and high performance for the application, resulting in a 65% uptime and improved user experience.
- Researched and developed a renewable energy-based design system for transporting food into space, resulting in a 40% reduction in energy consumption and increasing efficiency by 30% compared to current published methods.
- Developed **CAD** models using **AutoDesk Inventor** and graphic designing software (Adobe Suite, DaVinci Resolve).

PROJECTS

ML/AI Robotics Match Prediction   *Cary, NC*

Personal Project   *Feb 2024 – Mar 2024*

- Utilizing the Statbotics API to predict matches with around a 85% success rate and alliance selections for FIRST Robotics.
- With assistance from **Scikit-Learn,** coded cross validation (feature importance) by way of **Random Forest Classifiers**. In addition, ran a binary classification to train the data on accuracy.

Stock Investment Portfolio   *Cary, NC*

Duke Fuqua School of Business   *Jun 2024 – Present*

- Developed a custom stock investment portfolio website utilizing **Svelte** for the framework and **Tailwind CSS/HTML/JS** for responsive design, enhancing user experience and interface efficiency
- Implemented a robust back-end using **Flask API** and Python scripts to handle real-time stock data processing, providing accurate and timely investment insights. Currently working on hosting the platform for broader accessibility.

Tailor-Made File Navigator   *Cary, NC*

Personal Project   *Aug 2024– Sept 2024*

- Created a new customized file explorer using the **C++** filesystem library in collaboration with **Qt Widgets** to create a GUI compatible with both Linux and Windows.
- Improves upon the standard file navigator by improving speeds time by 20%, fixing responsive issues, and allowing users to customize key binds to create a personalized navigator that works for them.

ACHIEVEMENTS

Finalist in ASA DataFest; Duke Statistics and Mathematics Department	*Mar 2024*
Qualified from 3,300 teams – International Finalist; FIRST Robotics Worlds Competition	*Apr 2023*
Top 10 / 250,000+ participants; Technology Student Association's National Webmaster Cup	*Jul 2022*
International Semi-Finalist from 300+ teams; StellarXplorers Association Competition	*Apr 2022*
Honorable Mention in Math Modeling; Duke Mathematics Department	*Nov 2023*

SKILLS

Coding & Modelling: Python (Matplotlib, Tensorflow), Java, JavaScript (Svelte, React, Node.js), C++, C, C#, SQL, AWS, CAD