Waleed A. Raza

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EDUCATION

George Mason University Computer Science BS, Data Science Minor   August 2022 - Dec 2025
- Intro Computer Programming (taught in Python), Object-Oriented Programming (OOP taught in Java), Data structures & Algorithms (DSA taught in Java), Low-level Programming (LLP, taught in C), Discrete Math, Statistics, Calculus

EXPERIENCE

Freddie Mac - *Software Engineer/Data Platform Intern*

McLean, Va   May 2024 – Aug 2024
- Part of the Self-Service Data Platform Team, working on Kubeflow platform on AWS infrastructure for Machine Learning & Data Science needs.
- Assisted in developing, testing and deployment of TensorBoard feature from non-prod to dev platform. Wrote ML models in TensorFlow and PyTorch using KNN, K-Means, Linear & Logistic Regression algorithms to test implementation of TensorBoard feature to platform.
- Utilized TensorBoard's text plugin to display and analyze generated text samples and evaluation results from LLM's. Logged perplexity, BLEU scores, and other relevant metrics to track LLM performance.
- Worked with Kubernetes, sequentially evaluating pods to troubleshoot using cKF CLI, effectively documented TensorBoard implementation, setup, advantages, risks, etc. for Data Scientists. Responsible for Rapid Prototyping presentations in end of sprint Demo Meetings in front of Data Department.

ClayDesk - *AWS Support intern*

New Jersey - Remote   June 2023 - August 2023
- Assisted in migrating on-premises infrastructure to AWS, estimated migration costs using a TCO calculator. Utilized CloudFormation templates for resource provisioning. Worked with CI/CD tools for code deployment.
- Managed IAM users, groups, and roles in an AWS Cloud Platform, Configured EC2 instances, security groups, and networking components. Implemented fault-tolerant and scalable AWS infrastructure.

LEADERSHIP

Computer Science Club at George Mason - *Founding President*

Fairfax, Va   April 2023 - Present
- Organized a wide range of events, workshops, hackathons, networking engagements, as well as guest speaker talks from industry professionals from Microsoft, AWS, Mitre, Freddie Mac etc. to provide learning opportunities for members.
- Oversaw growth from zero to 550+ members (>1/5 of all computer science students at Mason), spearheading outreach, and organizational infrastructure. Managed a team of 15+ to help organize corporate, hands-on/technical, and social events. **https://mason360.gmu.edu/gmucs/home/**

HackFax Hackathon at George Mason - *Executive Director*

Fairfax, Va   Aug 2023 - Feb 2024
- Responsible for coordinating/overseeing GMU's hackathon in 2024: **http://hackfax.com/** with over 450+ registrants.
- Developed the hackathon from inception to execution with the computer science department and club. Lead development of website, event infrastructure, sponsor outreach, marketing and management/coordination; worked with Marriott, Makpar industries, CompQsoft, and more to handle over 15k in funding.

PROJECTS

Hand-Recognition Shortcuts Application Using Computer Vision and Machine Learning
- Built with Python, OpenCV, MediaPipe, PyTorch, tkinter, scikit-learn; Hand motion detection and classification, leveraging ML models for higher accuracy. Users can perform various functions such as copy, move desktop, open browser, and navigate between screens using predefined hand gestures.
- Uses OpenCV & MediaPipe for tracking & feature extraction, TensorFlow is used to train deep learning models on gesture datasets for precise recognition.
- scikit-learn is utilized for preprocessing data and model evaluation, ensuring optimal performance.
- Integrated into an application via the tkinter framework, designed to continuously improve gesture recognition, analyzing user data and retraining models.

Patriot Assist - Natural Language Processing Course Scheduler
- Built with SK-Learn, K-means & mean shift data clustering, tSNE, HTML, CSS, JS, NLTK Natural language processing toolkit was imported as a library to develop a python Algorithm also including scrapy and spacy libraries to scrape, format, and evaluate data.
- Created to help the students of George Mason gain insight on courses they should take based on their input. User data is processed via sentiment analysis from natural language processing and matched to relevant data clusters to filter correct information.

Finance Tracker App for Mac and iOS
- Built with Swift, Xcode, Core Data, Node.js, Express, MongoDB, AngularJS, Java, Python
- Implemented a robust backend using Node.js and Express, utilized MongoDB for data storage and retrieval. Integrated with a RESTful API to enable seamless communication between iOS app and backend server,. Incorporated AngularJS for building a responsive, dynamic user interface.
- Employed Core Data for local data persistence, implemented data validation and processing using Python, utilized Java for data processing tasks.

SKILLS
- **Back/Front-end Development:** Python, Java, C/C++, JavaScript, Swift HTML, CSS, Node.js,
- **Data Science & Machine Learning:** PyTorch, TensorFlow, TensorBoard, scikit-learn, NLTK, Scrapy, spaCy
- **Other:** Unix, Xcode, Objective-C, Junit, Git, GitHub, Kubernetes, Docker, Atlassian Suite, AWS Cloud, Azure MongoDB, AWS, Hadoop, Spark