Muhammad Umar Waseem

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PROFESSIONAL SUMMARY

Muhammad Umar is Computer Science graduate where he has had hands-on experience with developing and deploying Full Stack Web and Mobile App solutions to the cloud providers like Azure and AWS, including Machine and Deep Learning microservices. Muhammad also has experience in solving a variety of problems while working with different people as a freelance software engineer.

EXPERIENCE

Software Engineer

Cowlar Design Studio, Islamabad, Pakistan

- Collaborated with teams of Web, Mobile, ML, and Embedded System Engineers, integrating embedded systems, IoT devices, low energy devices, Bluetooth systems, online web APIs with mobile and web apps, resulting in seamless and enhanced user experiences.
- Automated workflows using Github Actions and Gitlab Devops workflows, ensuring product quality and agility, which significantly reduced errors and improved development speed.
- Optimized product performance and costs for mobile platforms, achieving a 50-60% improvement in efficiency and cost-effectiveness.
- Worked on different initiatives which could be taken to improve existing team workflows such as suggesting agile no code tools and keeping team members aware of new libraries and improvements.

Head App Development

Google Student Developers Club, Islamabad, Pakistan

- Developed mobile applications using Flutter, providing innovative solutions and contributing to various projects within the community.
- Conducted over 5 workshops to educate and enable students, successfully familiarizing at least 50% of the attendees with essential software engineering skills and technologies.
- Led app development initiatives, mentoring peers and fostering a collaborative learning environment to enhance the technical capabilities of the club members.

Freelance Software Engineer

Google Student Developers Club, Islamabad, Pakistan

- Fixing bugs to making major modifications in existing code bases.
- Deployment on cloud platforms such as **AWS** and **AZURE** using devops techniques.
- Worked with a diverse set of problems having a set of use cases.
- Fulfilled a variety of requirements including management systems, simple to complex apps such as apps that handle whole operations of a hotel / restaurant, social media competitors etc.

SKILLS
Python - Tensorflow / Keras / Pytorch - Numpy / Pandas - Mlflow - Flask / Django / Model Deployments - Docker / Kubernetes / Github Actions / Jenkins - Jira / Airflow / C++ / Backend Development / Nodejs / Golang

PROJECTS

Retrieval Augmented Gemini Chatbot   Link
- Retrieval augmented generation based chatbot
- Uses langchain which is a new framework for working with different AI models
- Uses google's gemini as a large language model
- Reduces hallucination and gets the latest data ensuring privacy and concise answers

Airflow Data Extraction Pipeline   Link
- Seamless ETL pipeline
- Extracts data from source, performs cleaning and sends to storage
- Scheduled and manual pipeline triggers

IslamKGHub Final Year Project   Link
- Knowledge graph based Q&A system for relevant stakeholders to study and ask about Islamic Hadith which is a vast database of knowledge maintained over a lot of years
- Uses natural language processing to serve user queries
- Graph DB and SparQL queries to extract data from the knowledge graph
- Backend system APIs fully deployed and seamless for communication of the graph to frontend

GAN Cifar-10 Generative Image Modeling   Link
- Generative Adversarial Network trained on CIfar 10 dataset
- Compute intensive model training while saving model checkpoints to continue training in supervision or chose a different platform for GPU availability
- CUDA and CUDNN usage for model training over a range of 200 epochs on an NVIDIA RTX 3060ti

Siamese Networks Image Similarity   Link
- Siamese neural network for images similarity calculation
- This kind of model contains pair of neural networks which contain shared weights for better performance and similarity calculation

Golang Blockchain   Link
- A full fletched blockchain implemented in Golang.
- Peer to peer network system for nodes.
- Asynchronous go routines to handle different processes in the blockchain
- Adjustable block mining difficulty to simulate the real world.
- Structured merkel tree made from each transaction and block mined.

Find more projects on github.com/Umar-Waseem

EDUCATION
Bachelors Of Computer Science
Fast National University Of Computer And Emerging Sciences

Subjects: Data Structures, OOP, Artificial Intelligence , Generative AI, MLops

CERTIFICATIONS
- **Azure AZ900**   2024
- **AWS Cloud Certified Practitioner** (in progress)

VOLUNTEER WORK
- Community Volunteer with Pakistan Red Crescent   May, 2024