

Ishrak Latif

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Intro

A skilled software engineer with 3+ years of experience in AI, Machine Learning, and software development. Proficient in fine tuning advanced AI models and delivering data-driven solutions.. Excels in managing end-to-end projects, adapting to challenges, and delivering impactful results in dynamic environments.

Technical Expertise

Languages: Python, C, C++, JavaScript, SQL

Frameworks: Flask, Django, TensorFlow, PyTorch, FastAPI, Serverless

Developer/ML Tools: Git, Docker, GitHub Actions, Jupyter, npm, MLflow

Libraries: PyTorch, TensorFlow, scikit-learn, pandas, NumPy, Matplotlib, PySpark, Selenium WebDriver

Cloud: Azure (Azure Machine Learning, Azure Kubernetes Service, Azure Container Registry), GCP (BigQuery, AI Platform)

Public Projects

DATA ANALYSIS ON FOOTBALL DATA | Python, Matplotlib

- Analyzed sports data from the Bundesliga, Germany's 1st division football league, using statistical methods like T-test and Mann Whitney U-Test.
- Created visualizations, including histograms, bar charts, and scatterplots, using Matplotlib's pyplot to represent aggregate results effectively.

DETECT HANDWRITTEN DIGITS | Python, TensorFlow

- Developed a Neural Network model capable of detecting handwritten digits.
- Split the dataset with a 6:1 ratio for training and testing.
- Employed the Adam optimizer for stochastic gradient descent and sparse categorical cross entropy as the cost function.

AI SURVEILLANCE | Python, Django, OpenCV

- Designed a video surveillance platform in Django capable of streaming video from recording devices and detecting human presence to trigger alarms in case of trespassing.
- Image preprocessing was performed using OpenCV, and training utilized OpenCV's deep neural network module with a 60/40 train-test data split.
- Graded A+ by HOD Brigadier General Razzak and forwarded to military R&D for further research.

RAG PIPELINE | Python, LangChain, HuggingFace, Chroma DB

- Conducted research on a Retrieval-Augmented Generation (RAG) pipeline using open-source encoders and foundational large language models.
- Utilized LangChain with sentence transformers (bge-base-en-v1.5) for data chunking and embeddings in a Chroma DB vector store.
- Integrated HuggingFace's Zephyr-7b-alpha model for text generation by feeding the retrieved query and context in system prompt format.

Professional Experience

Lieutenant

Bangladesh Army

01/01/2016 - 25/06/2021

Bangladesh

- Conducted Gun maintenance as Military Transport Officer of an Artillery Unit
- Conducted military exercise as Command Post Officer of an Artillery Unit
- Conducted staff operational duties as Adjutant of an Artillery Unit
- Conducted staff operational duties as Quartermaster of an Artillery Unit
- Conducted staff operation duties as G3 ops in an Artillery Brigade

Senior Software Engineer

Aztech Valley Ltd

01/09/2022 - 30/07/2024

Bangladesh

- Designed and deployed an NLP-powered platform to assist hospital emergency staff in real-time decision-making during medical emergencies, leveraging Python and TensorFlow.
- Developed a Retrieval-Augmented Generation (RAG) pipeline using LangChain with BioMistral and PubMedBERT embeddings to provide context-aware recommendations from unstructured EHR data.
- Integrated PySpark for data preprocessing and stored embeddings in Chromadb vector stores for efficient data retrieval and query handling.
- Engineered end-to-end data pipelines for scalable and fault-tolerant model deployment using Docker, Jenkins, and Kubernetes.
- Incorporated advanced visualization techniques with Matplotlib to create real-time dashboards for emergency response data, enhancing operational clarity and decision-making.
- Automated model updates with CI/CD pipelines, leveraging MLflow for experiment tracking and deployment on Azure Kubernetes Service.

- Ensured GDPR compliance by implementing secure credential management using Azure Key Vault and adopting robust data handling protocols.
- Designed Flask-based APIs for seamless integration with hospital information systems, enabling real-time query responses and operational efficiency.
- Conducted extensive A/B testing, leading to a 20% improvement in staff efficiency by optimizing platform response accuracy and usability.
- Presented the platform at healthcare innovation forums, earning recognition for its innovative application of AI in critical emergency response systems.

Consultant Engineer

01/07/2023 – 30/06/2024

BD Thai Ltd

Bangladesh

- Planning of purchase and integration of new technologies with the Managing Director.
- Conduct meetings with stakeholders on behalf of the company for software and hardware purchase.
- Manage teams from suppliers during calibration and setting up purchased hardware.
- Assist managing director in meetings with government officials during product presentation.

Consultant Engineer

01/09/2023 – 30/07/2024

Dhaka National

Medical Institute Hospital

Bangladesh

- Planning of purchase and integration of new technologies with the Project Director.
- Conduct meetings with stakeholders on behalf of the company for software and hardware purchase.
- Manage teams from suppliers during calibration and setting up purchased hardware.
- Assist and conduct presentation for the director in meetings with health ministry for fund allocation of new technology

Education

Bangladesh Military Academy
Military Science

Chittagong, Bd

Artillery Center and School
Artillery Basic Course

Chittagong, Bd

Bangladesh University of Professionals
Bachelor of Science in Computer Science and Engineering

Dhaka, Bd

Monash University
Master of Science in Artificial Intelligence(on going)

Melbourne, Aus