

Ishrak Latif

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Intro

Passionate AI Engineer and MSc Artificial Intelligence student at Monash University with hands-on experience in Natural Language Processing, and Computer Vision. Skilled in developing and fine-tuning deep learning models using Hugging Face and integrating them into scalable pipelines.

Driven by curiosity to bridge theory and practice through research-guided experimentation — currently seeking a Summer 2025 AI internship to contribute to innovative projects while learning under experienced mentors in applied deep learning and multimodal AI.

This internship will allow me to apply my academic knowledge to real-world systems while learning best practices in AI research and deployment from industry experts.

Technical Expertise

Languages: Python, C++, JavaScript, SQL

Frameworks: Flask, Django

Cloud: Azure (Azure Machine Learning, Azure Kubernetes Service, Azure Container Registry)

Public Projects

RAG PIPELINE | BERT encoder

- Built a Retrieval-Augmented Generation (RAG) system integrating **Zephyr-7B and sentence-BERT** embeddings to provide contextual document summarization.
- The retriever achieved a **Recall@5 of 0.82**, indicating it successfully retrieved relevant biomedical passages in 82% of test queries.
- Processed **over 100K research abstracts from PubMed** for biomedical question answering and semantic search.

AI SURVEILLANCE | OpenCV

- Designed and deployed a **real-time video surveillance system** with human detection accuracy of **94%** at 20 FPS on live camera feeds.
- Implemented OpenCV DNN for optimized frame processing, achieving **30% faster detection** versus baseline SSD.

- The system was successfully demonstrated at **Bangladesh military R&D lab**, earning **A+ academic recognition** and recommendation for national defense research adoption.

DETECT HANDWRITTEN DIGITS | Python, TensorFlow

- Trained a fully connected neural network on **60,000 MNIST images**, reaching **98.4% test accuracy** after hyperparameter tuning.
- Utilized Adam optimizer with sparse categorical crossentropy to achieve **30% faster convergence** than baseline SGD.
- Deployed model inference pipeline in TensorFlow for lightweight local prediction under **50 ms latency per digit**.

DATA ANALYSIS ON FOOTBALL DATA | Python, Matplotlib

- Conducted statistical analysis on **10K+ Bundesliga match events**, applying **T-tests** and **Mann-Whitney U-tests** to extract player performance patterns.
- Created 15 Matplotlib visualizations (histograms, bar, scatter plots) that revealed team consistency trends and match outcome correlations.
- Findings improved data-driven decision making for predictive modelling of player form by **20% accuracy lift** compared to simple averages.

Professional Experience

Lieutenant

Bangladesh Army

01/01/2016 - 25/06/2021

Bangladesh

- **Led 120+ personnel** across artillery units as Command Post and Adjutant Officer, overseeing large-scale training operations and logistics coordination.
- **Improved battlefield communication efficiency by 2%** by streamlining the Gun Command Post data relay architecture and radio frequency management.
- **Conducted penetration testing and cybersecurity assessments** for the **Multi-Launch Rocket System (MLRS) fire-control networks**, identifying and patching critical vulnerabilities in encrypted channels.
- **Optimized artillery maintenance workflow**, reducing downtime of heavy vehicles and weapon systems.
- Collaborated with the Brigade's G3 Ops section to **digitize mission logs**, enhancing after-action review turnaround.
- Earned commendation for outstanding leadership and precision in operational planning during live-fire exercises.

Senior Software Engineer
Aztech Valley Ltd

01/09/2022 – 30/07/2024
Bangladesh

- **Developed and deployed** an NLP-powered hospital emergency response platform used by **200+ staff members**, enabling real-time triage recommendations and **reducing average response time by 20%**.
- **Built Retrieval-Augmented Generation (RAG) pipelines** with **BioMistral** and **PubMedBERT**, improving medical query accuracy by **25%** and shortening retrieval latency by **40%** using optimized ChromaDB vector indexing.
- **Integrated PySpark pipelines** for EHR preprocessing, supporting data throughput of **1.5M records/hour** with distributed fault-tolerance on Azure.
- **Automated CI/CD workflows** with **Docker, Jenkins, and MLflow**, reducing manual deployment effort by **60%** across Kubernetes clusters.
- Incorporated advanced visualization techniques with Matplotlib to create real-time dashboards for emergency response data, enhancing operational clarity and decision-making.
- **Implemented GDPR-compliant data encryption and credential management** using Azure Key Vault, ensuring **100% audit pass rate** on security evaluations.

Consultant Engineer

01/07/2023 – 30/07/2024

Dhaka National Medical Institute Hospital & BD Thai Ltd
Bangladesh

- Advised directors on **AI-based medical technology acquisitions** and **software integrations**, contributing to a **15% reduction in procurement cycle time**.
- Managed cross-vendor teams during calibration and setup of new hardware systems, ensuring **zero downtime during deployment**.
- Designed and presented technical roadmaps to the **Bangladesh Health Ministry**, leading to **successful approval and funding allocation** for modernization projects.

Education

Bangladesh Military Academy Dec 2018
Military Science

Chittagong, Bd

Artillery Center and School Feb 2019
Artillery Basic Course

Chittagong, Bd

Bangladesh University of Professionals Jan 2022
Bachelor of Science in Computer Science and Engineering

Dhaka, Bd

Monash University Expected 2026
Master of Science in Artificial Intelligence(on going)

Melbourne, Aus