Ahmad Mustafa Anis

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EDUCATION

International Islamic University   Islamabad, Pakistan
Bachelors of Science in Computer Science   *September 2018 – September 2022*

- Key Courses: Advanced Computer Programming, Object Oriented Analysis and Design, Data Structures and Algorithms, Operating Systems, Database Technologies, Artificial Intelligence, Parallel & Distributed Computing

EXPERIENCE

AI Research Fellow   Sep 2024 – Current
Fatima Fellowship

- Working on multi-modal RAG for medical domain that can self-improve, advised by Dr. Wei Peng from Stanford University

Deep Learning Engineer   Mar 2024 – Current
Roll AI

- Enhanced plain bokeh to depth based bokeh for realistic effects using Monocular Depth Estimation and Human Matting.
- Integrated Active Speaker Detection for live events using LightASD with localization and detection, reducing false positive rate from 20% to 5%, improving system accuracy and reliability.

Machine Learning Engineer   April 2022 – Mar 2024
Red Buffer

- Created a fact verification and identification pipeline, integrated multi-threading for a 200% speed increase, fine-tuned LLAMAv2, Dolly-3B, GPT-Neo, and BART for negation generation to search for false news.
- Improved OCR latency from 0.6 FPS to 16 FPS on the CPU for streaming devices to blur sensitive information.
- Integrated Real-Time Dashboards using Dash and Plotly for CO2 Emissions into a Machine Learning Pipeline.
- Boosted Accuracy to 85% from 30% for logo recognition during cricket matches using CLIP by OpenAI.
- Developed a drag and drop RAG system which can be used with any LLM, vector DB, and multi-hop search.

AI Fellow   December 2023 – February 2024
PI School of AI

- I was was selected (10 in 300 applicants) from all over the world to turn with fellowship worth 12,500€ where I worked on extracting key information from long context interview transcripts using LLMs (**MistralLite, Mixtral8x7B**). Worked on RAG using DSPy.

Software Engineer (Deep Learning and Computer Vision)   Dec 2021 – March 2022
WortelAI

- Created a real-time search engine for videos using CLIP by OpenAI, Qdrant for Vector DB, and ElasticSearch.
- Performed Multi-label Text Classification using BERT and PyTorch for 1500+ labels.

Deep Learning and Computer Vision Intern   July 2021 – Dec 2021
WortelAI

- Developed Safety Clothes Detection for Factory workers using Yolov5.
- Trained a Celebrity Detection and Classification system using 3DDFAv2, ResNet50, and a 172GB Dataset.

Contributing Editor   Sep 2020 – July 2021
KDNuggets

- Wrote 21 original ML articles, accumulating over 500,000 views, **Profile Link**

TECHNICAL SKILLS

Programming Languages: Python, C++, Rust, Java, JavaScript
Libraries/Frameworks: PyTorch, Tensorflow, PyTorch Lightning, Distributed Training, OpenCV, Flask, FastAPI
Databases: MySQL, PostgreSQL
Tools: Git, GitHub, GitLab, Docker, Markdown, Jupyter Notebook, Anaconda, Visual Studio Code, Pep8

PUBLICATIONS

- S. Longpre, R. Mahari,... **A. M. Anis**(16th Author), et al. *Consent in Crisis: The Rapid Decline of the AI Data Commons.* Presented at **NeurIPS 2024**. [Paper]

- S. Longpre, N. Singh,... **A. M. Anis**(11th Author), et al. *Bridging the Data Provenance Gap Across Text, Speech, and Video.* Under review at **ICLR 2025**.

- **A. M. Anis** *On the Limitations of Vision-Language Models in Understanding Image Transforms*, Targeting **CVPR 2025 workshops** [Paper].

SELECTED PROJECTS

Multimodal Semantic Search Engine
- Implemented a mini search engine that can search across Text-to-Image, Image-to-Image search, and Image-to-text using CLIP. Github, and Medium article

DistAYA
- AYA Expedition project, creating small multilingual LLMs distilled from large multilingual LLMs, Hugging Face

VOLUNTEER EXPERIENCE

Research Contributor | *Data Providence Initiative* | *MIT Media Lab* Dec 2023 – Present
- Auditing LLM training data to assess web data access shifts, cultural representation and advocating for transparency.

Volunteer Researcher & Regional Community Lead | *Cohere for AI* Nov 2022 – Present
- Organized over 50 guest speaker sessions with Asian researchers from top universities and institutes.
- Initiated NYU Deep Learning study group (Prof. Yann LeCun).
- Urdu Language lead for AYA, a Multi-Lingual model by Cohere. Contributed 3 Urdu datasets for AYA collection.

Mentor | *KP Women Civic Digital Internship Program 2024-25* | *Code for Pakistan* Dec 2024 – Present
- Mentoring young girls in KP Pakistan in the field of Artifical Intelligence

Fellowship Lead | *Bytewise Limited*
- NLP Lead (Jun-Aug 2024): Mentoring 20 students, supervising the NLP curriculum.
- Data Science Lead (Mar-May 2023): Mentored 50+ students, devised curriculum.

AWS Community Builder | *Amazon Web Services* Aug 2022 – Apr 2023
- Organized events to raise awareness about AWS services in local community.

BLOGS AND TECHNICAL WRITING

Medium, KDNuggets, CNVRG

INTERVIEWS & PODCASTS

Interview with AtomCamp providing advice for beginners in Machine Learning.

Podcast with Adventures in Machine Learning on how to optimize and improve **OCR** systems

Podcast with Adventures in Machine Learning on how to deploy Deep Learning models with **FastAPI**

CERTIFICATIONS, ACHIEVEMENTS

Courses & Certifications:
- Microsoft Technology Associate (MTA) 98-381 Introduction to Programming Using Python
- Machine Learning by Coursera
- Deep Learning Specialization by Coursera
- Getting Started with TensorFlow 2 by Coursera
- NYU Deep Learning by Yann LeCun
- Mathematics for Machine Learning by Imperial College London

Achievements:
- 2600+ points on StackOverflow, impacting 300k+ people
- 5 kyu, top 36% worldwide at Codewars
- Platinum badge on KDNuggets