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

- Architected a multimodal LLM Agent as a centralized AI video editing system, automating social media clip generation, video orientation/cropping, transcript correction, and dynamic VFX/motion graphics creation to streamline post-production workflow.
- Enhanced depth-based bokeh effects for real-time video processing using Monocular Depth Estimation and Human Matting, achieving 100% speed improvement through multiprocessing and batch optimization for live event streaming.
- Advanced video processing from simple to depth-based bokeh effects using Monocular Depth Estimation and Human Matting, achieving 100% speedup through multiprocessing and batch optimization.

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.
- 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

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

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

- 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]

Selected Project

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 | *MESA program at Foothill College* | *MESA@Foothill*   Jan 2024 – Present
- Providing mentorship to underrepresented students in STEM at Foothill College .

Fellowship Lead | *Bytewise Limited*
- NLP Lead (Jun-Aug 2024): Mentoring 20 students, supervising the NLP curriculum.

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

Interviews , Podcasts, Blogs & Technical Writing

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**

Medium, KDNuggets, CNVRG

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