

Ahmad Mustafa Anis

+92-314-5617800 | <https://ahmadmustafaanis.github.io/> | [linkedin.com/in/ahmad-anis](https://www.linkedin.com/in/ahmad-anis) | github.com/ahmadmustafaanis | ahmadanis5050@gmail.com

EDUCATION

International Islamic University

Bachelor of Science in Computer Science

Islamabad, Pakistan

September 2018 – September 2022

- CGPA: **3.43**/4.0
- Key Courses: Advanced Computer Programming, Object Oriented Paradigm, Data Structures and Algorithms, Operating Systems, Database Technologies, Artificial Intelligence

AI For Global Goals — OXML

Oxford ML Summer School, MLx Fundamentals

Oxford, UK

May 2024 – Jun 2024

- Key Topics: Mathematics of ML, Factorisation techniques, Generalization / Robustness, Optimisation, Representation learning, Generative AI

Presidential Initiative for AI — PIAIC

AI Developer Program

Islamabad, Pakistan

Sep 2019 – Apr 2022

- Key Topics: Python, Machine Learning, Deep Learning, AWS

EXPERIENCE

Computer Vision and Graphics Engineer

Roll AI

Mar 2024 – Current

- Working on Bokeh for Video using Semantic Segmentation and Depth Estimation
- Working on Active Speaker Detection

Machine Learning Engineer

Red Buffer

April 2022 – Mar 2024

- 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.
- Reduced injury risk by achieving 95% accuracy using Computer Vision techniques for a mining ship.
- Boosted Accuracy to 85% from 30% for Logo Recognition during cricket matches using CLIP by OpenAI.
- Created a Fact Verification and Identification Pipeline from articles, fine-tuning open-source LLMs like LLaMAv2, Dolly-3B, GPT-Neo and using MultiThreading for a 200% speed increase.
- Developed a Generic Chat With PDF with Dynamic LLM, indexing, vector DB, Multi-Hop Search, and Smart Prompts, using Llama Index.
- R&D for Pose Estimation models for Illegal Bowling Angle Detection in Cricket.
- Communicated technical and project updates with clients and wrote original ML articles for Redbuffer's Medium with over 8,000 views.

AI Fellow

PI School of AI

December 2023 – February 2024

- PI School of AI selects a batch of the best engineers from all over the world to turn them into AI specialists via a 2-month fellowship worth 12,500€.
- Extracting Key Information from long context transcripts using Open Source Large Language Models (**MistralLite**, **Mixtral8x7B**) that can run on consumer hardware.

Software Engineer (Deep Learning and Computer Vision)

WortelAI

Dec 2021 – March 2022

- Created a real-time Search Engine using Deep Learning with CLIP by OpenAI, Qdrant, and ElasticSearch.
- Performed Multi-label Text Classification using BERT and PyTorch for 1500+ labels.

Deep Learning and Computer Vision Intern

WortelAI

July 2021 – Dec 2021

- 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

KDNuggets

Sep 2020 – July 2021

- Wrote 30+ original ML articles, accumulating over 410,000 views.
- Profile Link

RESEARCH INTERESTS

- **Information Retrieval** via pre-training
- **Representation Learning**
- Deep Learning **Interpretability**

RESEARCH PROJECTS

Instruct Localized and Spatial Reasoning for Visual Question Answering Models [On-going]

- Working on creating a benchmark dataset that will introduce localized and spatial reasoning for Visual Question Answering Models and evaluate them.

Auditing 24% of the Web: Rapid Shifts in Provenance, Consent, and Copyright through Time

Under Review

- Authors: Shayne Longpre, Robert Mahari, Nikhil Singh, Manuel Cherep, Campbell S. Lund, Ariel N. Lee, Kushagra Tiwary, Joanna Materzynska, William Brannon, Nayan Saxena, Manan Dey, Mohammed Hamdy, Hamidah Oderinwale, **Ahmad Mustafa Anis** et al. (33 additional authors not shown)

PERSONAL PROJECTS

Celfie AI

- Developing a Selfie generator that allows users worldwide to generate selfies using state-of-the-art Image Generation models.
- Utilizing FastComposer for multi-subject generation and serving the backend on AWS.

Musculoskeletal Radiographs Classification

- Detecting normal/abnormal X-rays using the MURA dataset by Stanford.
- Applying Transfer Learning with models such as DenseNet, ResNet-101.
- [Code](#)

Multimodal Semantic Search Engine

- A mini search engine that can perform
 - * Text-to-Image search
 - * Image-to-Image search
 - * Image-to-text search
- [Code](#)
- [Write-up](#)

Vehicle Detection, Recognition, and Tracking on Roads

- Implementing real-time vehicle detection and recognition using Yolov5, and SORT for vehicle tracking.
- Managing data with PostgreSQL database.
- [Code](#)

Deploying Deep Learning Model

- Deployed a Deep Learning NLP Model to Heroku with continuous integration and deployment from GitHub.
- [Podcast with Top End Devs](#)
- [Code](#)

VOLUNTEER EXPERIENCE

Volunteer Researcher & Regional Community Lead | *Cohere for AI* Nov 2022 – Present

- Organizing sessions on Machine Learning, featuring experienced researchers from the Asian community with guest speakers from Stanford University, UC Berkley, Carnegie Mellon University, Cambridge University, Allen Institute for AI, NTU Singapore, and others.
- Delivered presentations on topics like CLIP by OpenAI, SimCLR, and SimCLRv2 by GoogleAI.
- Coordinated a Research project on Retrieval Augment Generation under the guidance of a Research Manager at Google.
- Initiated a study group for the NYU Deep Learning course by Professor Yann LeCun.
- Serves as the Urdu Language Regional lead for AYA, a Multi-Lingual Open Science instruction Tuning project.
- Collaborating on multiple ongoing projects within the community.

Fellowship Lead, Data Science | *Bytewise Limited* Mar 2023 – May 2023

- Mentored over 50 students, devising a curriculum tailored for emerging data scientists.
- Conducted regular follow-ups to monitor progress and resolve challenges, facilitating project and job opportunities for participants.
- Initiated and lead volunteer training programs for young students and professionals in Pakistan, aimed at kickstarting their careers in technology.

Fellowship Lead | *Bytewise Limited* Mar 2023 – May 2023, June 2024 – Aug 2024

- Data Science Lead (Mar 2023 - May 2023): Mentored over 50 students, devised a curriculum, followed up on progress and challenges, facilitated project and job opportunities for participants.
- NLP Lead (June 2024 - Aug 2024): Will mentor students and professionals, oversee curriculum and training for NLP, ensuring practical experience and application readiness.
- Initiated and lead volunteer training programs for kickstarting careers of young students in Pakistan

AWS Community Builder | *Amazon Web Services* Aug 2022 – Apr 2023

- Collaborated with local AWS Community to organize events and awareness about AWS services.

BLOGS AND TECHNICAL WRITING

[Medium](#)

[KDNuggets](#)

[CNVRG](#)

INTERVIEWS & PODCASTS

[Interview with AtomCamp](#) discussing the motivation and advice in Machine Learning for beginners

[Podcast with Adventures in Machine Learning](#) how to optimize and improve **OCR** systems

[Podcast with Adventures in Machine Learning](#) on how to deploy Deep Learning models with **FastAPI**

CERTIFICATIONS, ACHIEVEMENTS, & COMMUNITY WORK

Courses & Certifications:

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

Achievements:

- [5 kyu on Codewars](#)
- [Platinum badge on KDNuggets](#)
- [2300+ points on StackOverflow](#)

TECHNICAL SKILLS

Programming Languages: Python, C++, Rust, Java, JavaScript

Libraries/Frameworks: SkLearn, NumPy, Pandas, Flask, Django, FastAPI, Keras, TensorFlow, PyTorch, OpenCV

Databases: MySQL, PostgreSQL

Tools: Git, GitHub, GitLab, Docker, Markdown, Jupyter Notebook, Anaconda, Visual Studio Code, Pep8

REFERRALS

Dr. Muhammad Nadeem (Assistant Professor at International Islamic University, Islamabad)

Email: nadeem@iiu.edu.pk

Dr. Tariq Sadad (Assistant Professor at the University of Engineering and Technology, Mardan)

Email: tariqsadad@uetmardan.edu.pk

Aqsa Kausar (Head of AI at RedBuffer)

Email: aqsa.kausar@redbuffer.ai