Muhammad **Ammar**

ammar2k.github.io muhammad2000ammar@gmail.com /muhammad2000ammar

Experience

Data Science Intern, Learners.ai   July 2023 – Present

- Used LangChain and pinecone to create a GPT-4 powered chatbot that takes in a query and generates content based on relevant propriety data.
- Developed an application using LangChain Agents that uses tools to perform actions. The agent automatically decides which tool to use depending on the query using ReAct prompting.
- Used prompt engineering with OpenAI API to develop a private application that takes in meeting transcript and generates user stories from it.
- Developed applications using streamlit as frontend, deployed on AWS.

Undergraduate Research Assistant   Nov 2021 - July 2022

- Worked on senior year research project with bi-weekly presentations to the supervisory panel.
- Developed control algorithm for mobile robot on an Arduino, using ultrasonic sensors for obstacle avoidance, IR sensors for package detection for automation of delivery mechanism, and hall effect encoders for tracking the position of the robot through odometry.
- Secured funding under the National Grassroots Research Initiative 2022, held by IGNITE.
- Secured funding for AHFE Conference registration fee under Pakistan and European Union (EU)'s Horizon 2020, ENHANCE project.

Projects and Publications

- A Chain-Driven Live Roller Mechanism for Loading and Unloading Packages on Autonomous Mobile Robots in Warehouses – Published as first author.
- Developed Pneumonia diagnosis app through X-ray image analysis using Vision Transformers (ViT).
- Developed an application that takes in a call transcript, displays the summary, gets guest information and grabs information on them from Wikipedia. Developed using streamlit and deployed on Modal.
- Using Intel Image Classification dataset, finetuned ViT architecture model to classify different scenes.
- Developed and deployed a food classification app by finetuning EfficientNet (EffNet).

Technical Skills

- **Computer Vision:** OpenCV, Image Preprocessing, YOLO, SSD, CNN, Vision Transformers
- **Natural Language Processing:** naïve bayes, HMMs, word embeddings, LSTM, GRU, Transformers, LLMs
- **Programming/Tools:** Python, MATLAB, GIT, Streamlit, Gradio
- **Machine Learning:** Data cleaning and analysis, Classical Machine Learning
- **Deep Learning:** Neural Networks, Transformers, LLMs, PyTorch, Keras

Education

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY (NUST)   Islamabad, Pakistan

B.Sc. Mechanical Engineering **CGPA: 3.16/4.0**

IELTS 8.5 Bands

Certifications & Courses

- Machine Learning Specialization from DeepLearning.AI
- Natural Language Processing Specialization from DeepLearning.AI
- PyTorch for Deep Learning from Zero-to-Mastery
- Generative AI with Large Language Models from DeepLearning.AI
- Uplimit Building AI Products with OpenAI