

Muhammad Ali Khan

+92-330-9863439 | m.thekhan2003@gmail.com | [linkedin.com/in/muhammadalikhanaideveloper/](https://www.linkedin.com/in/muhammadalikhanaideveloper/) | github.com/AKDURANI

TECHNICAL SKILLS

Languages: Python, C/C++, Java, SQL, HTML/CSS, JavaScript

Frameworks: PyTorch, TensorFlow, Keras, Flask, Scikit-learn

Libraries & Tools: NumPy, Pandas, OpenCV, Matplotlib, Whisper, HuggingFace Transformers, TTS, SST, Prometheus, Grafana, MLflow

Developer Tools: Git, GitHub, DVC, Docker, Google Cloud Platform, Cursor, GitHub Copilot, IntelliJ, Visual Studio

EXPERIENCE

Teaching Assistant – Statistical Modelling

February 2025 – June 2025

FAST National University

Islamabad, Pakistan

- Assisted in course delivery, grading and supporting students in understanding statistical modeling concepts.

Research Intern – Artificial Intelligence and Machine Learning Lab

June 2023 – August 2023

FAST National University

Islamabad, Pakistan

- Explored and fine-tuned open-source **Large Language Models** (LLMs) such as **Falcon** and **LLaMA 2** for customer query datasets.
- Applied **NLP** techniques like **cosine similarity** to enhance data retrieval and semantic matching.
- Gained hands-on experience in model training, evaluation, and deployment pipelines for language tasks.

FINAL YEAR PROJECT

Palantir360 | Python, Colmap, Flask, Gaussian Splatting, Unity, GitHub, Oculus Link

August 2024 – June 2025

- Developed an innovative virtual reality experience that turns standard real estate walkthrough videos into fully interactive, **3D property tours**.
- Designed a smart **video-to-3D pipeline** that captures detailed spatial data to recreate stunningly lifelike environments.
- Seamlessly connected the **3D models** with **VR headsets**, allowing potential buyers to explore every corner of a property as if they were actually there.

PROJECTS

PureWeather AI | Python, Flask, Docker

December 2024 – January 2025

- Developed an **LSTM-based** time series model to predict air pollution levels with high accuracy.
- Integrated the model with **Prometheus** and **Grafana** for real-time monitoring and visual pollution alerts.

Chitchat Buddy | Falcon, LLaMA 2, Whisper TTS, Google SST, Flask

December 2024 – January 2025

- Built a multilingual voice-to-voice chatbot using **LLaMA2**, **Whisper TTS**, and **Google SST** for seamless interaction.
- Fine-tuned** models for improved query understanding and response generation, optimizing the user experience.
- Applied **NLP** techniques like **cosine similarity** to enhance data retrieval and make interactions more efficient.

Brain Tumor Segmentation | Python, PyTorch, ResNet, VGG-16, InceptionNet

February 2025 – June 2025

- Built a brain tumor detection and segmentation pipeline using the **BRATS dataset** in PyTorch.
- Applied preprocessing, augmentation, and CNN architectures such as **ResNet**, **VGG-16**, and **InceptionNet**.
- Gained hands-on experience in medical image processing and model optimization techniques.

PDF-to-Audio TTS Microservice | Flask, Coqui TTS, Docker, Locust, Postman

March 2025 – April 2025

- Built a **Flask-based microservice** that extracts text from PDFs, segments it with spaCy, and generates expressive multilingual audio using **Coqui XTTS**.
- Features: PDF upload, page range extraction, WAV/MP3 output, streaming, **Postman testing**, **Dockerization**, **gRPC-ready API**, and **Locust-based** performance testing.

EDUCATION

FAST National University of Computer and Emerging Sciences

Islamabad, Pakistan

Bachelor of Computer Science, Major in Artificial Intelligence

September 2021 – June 2025

Cadet College Hasanabdal

Hasanabdal, Punjab

Intermediate in Pre-Engineering

April 2016 – June 2021