

# Muhammad Abbas

AI / ML Developer · Flutter Developer · NLP Enthusiast

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## Summary

Fresh Graduate Computer Software Engineer from UET Mardan. Builds end-to-end AI/NLP projects (LLMs, semantic similarity, fine-tuning) and Flutter mobile apps. Passionate about solving real-world problems with modern AI tools and clean engineering.

## Education

**BSc Computer Software Engineering** — UET Mardan, KPK Oct 2022 – Present  
**High School Diploma (Engineering)** — PEF, Peshawar Apr 2020 – Mar 2022

## Projects

- MarkMaster AI** — Automated Exam Grading System *[Final Year Project]*  
*Python · Groq API · Llama 4 Scout 17B · Sentence Transformers · BERTScore · ChromaDB · Streamlit*
- Two-pass LLM vision OCR extracts handwritten answers; dual-layer scorer (topic + holistic) determines final grade.
  - RAG mode auto-generates model answers from course materials (ChromaDB); human moderation panel compares AI vs examiner scores.
- Urdu Abusive Language Detection**  
*Python · XLM-RoBERTa · OpenAI Whisper · Streamlit*
- Fine-tuned XLM-RoBERTa on 33,670 Urdu sentences achieving ~98% test accuracy with class-weighted loss for imbalanced data.
  - Integrated Whisper for live Urdu speech-to-text; Streamlit dashboard supports text, mic, and batch analysis modes.
- CLO Generator** — AI Course Learning Outcome Tool  
*Python · Phi-3 Mini LLM · Tesseract OCR · Streamlit*
- Generates Bloom's Taxonomy-aligned CLOs from uploaded PDF/Word documents using Phi-3 Mini LLM.
  - Smart extraction handles multi-column tables and scanned PDFs (Tesseract OCR) with runtime-configurable parameters.
- Flutter Mobile Apps** — Health Monitor & Appointment Booking  
*Flutter · Dart · Firebase · REST APIs*
- Two cross-platform apps: real-time health monitoring with Firebase and appointment scheduling with dynamic slot management.

## Technical Skills

|            |                                                                                             |
|------------|---------------------------------------------------------------------------------------------|
| AI / NLP   | LLMs (Llama 4, Phi-3 Mini), XLM-RoBERTa, Sentence Transformers, BERTScore, RAG, Fine-tuning |
| Speech/OCR | OpenAI Whisper, Tesseract OCR, LLM Vision                                                   |
| Languages  | Python, Dart                                                                                |
| Frameworks | Streamlit, Flutter                                                                          |
| Databases  | ChromaDB (Vector DB), Firebase                                                              |
| Tools      | Groq API, Kaggle GPU, CUDA, Git                                                             |

## Certifications

**Foundation of Data Science and Machine Learning --- Coursera** Nov 2025  
**Python Libraries For Data Science — Simplilearn** Jul 2025  
**Natural Language Processing --- Coursera** Jul 2025

## Relevant Coursework

Object-Oriented Programming · Data Structures & Algorithms · Design & Analysis of Algorithms · Recurrent Neural Networks