Abaidur-E-Rehman

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Summary

Motivated and self-driven Computer Science undergraduate with hands-on experience in **Machine Learning** and **Software Development**. Skilled in developing, optimizing, and deploying AI-driven applications using modern ML frameworks and web technologies. Strong analytical mindset with a focus on scalable solutions and measurable results.

Technical Skills

Languages & Tools: Python, Git, MongoDB, Jupyter Notebook, Google Colab, VS Code
Web & APIs: Flask, Streamlit, RESTful APIs, SMTP
ML Frameworks: Scikit-learn, TensorFlow, PyTorch, OpenCV
Techniques: Supervised & Unsupervised Learning, SMOTE, Feature Engineering, Hyperparameter Tuning, Anomaly Detection

Experience

Machine Learning Intern   Mar – Apr 2025
Developers Hub Corporation — Remote

- Designed and optimized real-time facial recognition pipelines using **OpenCV** and **CNNs**, improving detection accuracy by **18%** and reducing false negatives by **25%**.
- Automated deployment using **Flask APIs**, reducing model update time from 15 minutes to under 3 minutes.
- Documented system performance, behavior, and implemented robust logging for production reliability.

Machine Learning Intern   Mar – Apr 2025
Technohacks Solutions — Remote

- Built and compared ML models on financial datasets using **Scikit-learn** and **XGBoost**.
- Applied **SMOTE** to handle data imbalance, improving model accuracy to **87%**.
- Streamlined preprocessing and model training pipelines, cutting experimentation time by **40%**.

Projects

Auto Door Access System — Python, OpenCV, CNN, Flask — GitHub   Aug – Sep 2024

- Developed a smart door security system using **real-time facial recognition** to automatically authorize known individuals.
- Implemented an admin approval system with automated **email alerts** for unknown faces via a one-click "ALLOW" button.
- Enhanced recognition accuracy by **22%** through optimized CNN preprocessing and face alignment.

Emotion Detection from Text — BERT, HuggingFace, FastAPI — GitHub   Dec 2024 – Jan 2025

- Built a **multi-label emotion classification** model detecting emotions like joy, sadness, and anger.
- Fine-tuned **BERT** on Google's **GoEmotions dataset** (58k+ Reddit comments, 27 emotion classes + neutrality).
- Integrated the model with **FastAPI** for real-time emotion prediction.

Credit Risk Assessment App — XGBoost, SMOTE, Streamlit — GitHub   Oct – Nov 2024

- Developed a **Streamlit-based web app** to predict customer credit risk using financial and demographic data.
- Trained an **XGBoost classifier** achieving 89% accuracy and deployed for real-time classification.
- Delivered interpretable, data-driven insights for financial risk management.

Neural Network Basics — TensorFlow, Keras, Flask — GitHub   Feb – Mar 2025

- Implemented a CNN using **TensorFlow/Keras** for MNIST digit classification with **95%+ accuracy**.
- Deployed model with **Flask** for interactive digit recognition.

Predicting House Prices — Linear Regression, Flask, React, MongoDB — GitHub   Apr – May 2025

- Built a full-stack ML app predicting house prices using **Linear Regression**, **Random Forest**, and **XGBoost**.
- Designed a **Flask backend** and **React frontend** with **MongoDB** integration for persistent storage.

Education

University of Engineering and Technology, Lahore   2022 – 2026
Bachelor of Science in Computer Science   CGPA: 3.2

Govt. Islamia College Civil Lines, Lahore   2020 – 2022
F.Sc. Pre-Engineering   82%

Certifications

- HEC Generative AI Training – Cohort 1 (Oct 19 – Nov 30, 2025 — Six Weeks Live Online Sessions)
- Stanford Code in Place 2025 – Python Programming
- ITEC '24 Quiz Competition Certificate

Core Competencies

Problem Solving   —   Analytical Thinking   —   Model Optimization   —   Clean Code Practices   —
Team Collaboration