Esa Khan

Abbottabad, KP, Pakistan · +92 325 0070313 · esak62622@gmail.com · linkedin.com/in/esakhan-1b4941385 · github.com/esakhan786

Professional Summary

Computer Science student (7th semester) at COMSATS University Abbottabad with hands-on experience in Python programming, data science libraries, and supervised machine learning. HCIA-AI certified with a strong foundation in algorithms and mathematics. Currently working on machine learning projects in progress, demonstrated through multiple data analysis, visualization, and application development projects.

Education

COMSATS University Islamabad – Abbottabad Campus 2023 – 2027

Bachelor of Computer Science, Currently in 7th Semester

- Strong foundation in algorithms, data structures, and mathematical concepts
- Focused coursework in Machine Learning, Artificial Intelligence, and Software Engineering

Govt Postgraduate College Lakki Marwat 2020 – 2022

FSC, Computer Science

Technical Projects

Tkinter Login GUI Application | *Python, Tkinter*

- Developed a responsive login interface with email/password input and password hiding functionality
- Implemented validation system with success/error feedback and Enter key navigation support

Pakistani Retail Sales Analysis & Localization | *Python, Pandas, Seaborn, Matplotlib*

- Performed data cleaning and preprocessing on a dataset of 11,000+ records, handling null values and structural inconsistencies
- Developed a localization script to transform regional data (states/names) into a Pakistani context for targeted market analysis
- Generated statistical visualizations using Seaborn to identify key consumer demographics, revealing that the Female segment contributed 70% of total revenue
- Optimized data workflows by automating the grouping and sorting of sales metrics by Province and Gender

Student Performance Analysis | *Python, Pandas, Seaborn, Matplotlib*

- Conducted EDA to visualize gender distribution and the impact of test preparation on math scores

Netflix Students Usage Analysis | *Python, Pandas, Matplotlib*

- Analyzed subscription types, watch hours, genres, gender, country-wise distribution, and user ratings among university students

Student Results Management System | *Python, Pandas*

- Built app with DataFrame operations: record addition, score calculation, top performer ID, filtering, sorting, and CSV export

University Data Analysis | *Python, NumPy*

- Analyzed 200+ student records; performed GPA calculations, attendance tracking, and internship hours aggregation

ATM Machine System | *Python, OOP*

- Designed ATM simulation applying encapsulation and class-based design using OOP principles

Custom Data Structures | *Python*

- Implemented Fraction, Matrix, and Vector classes from scratch demonstrating deep understanding of Python's object model

Jarvis Voice Assistant (AI-Based) | *Python, SpeechRecognition, pyttsx3*

- Built voice-controlled assistant integrating speech recognition and text-to-speech (TTS)
- Performs tasks including opening websites, telling time/date, telling jokes, and playing YouTube content

News App (API-Based GUI) | *Python, Tkinter, News API*

- Created desktop news application fetching live headlines with images and next/previous article navigation

Wallpaper Viewer App | *Python, Tkinter, PIL*

- GUI-based viewer that fetches and dynamically displays online wallpaper images

Email Validator System | *Python*

- Built email validation logic with checks for length, @ presence, and character rules

Netflix Recommendation System (Logic-Based) | *Python*

- Built recommendation engine suggesting content based on user preferences without external ML libraries

Fortune 500 Data Analysis | *Python, Pandas*

- Analyzed real-world Fortune 500 dataset; performed grouping, insight extraction, and large CSV data cleaning

Technical Skills

Programming Languages: Python, Java, C, C++, C#, Flutter
Data Science Stack: NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn
Machine Learning: Supervised Learning Algorithms, Model Training and Evaluation
Core Concepts: Object-Oriented Programming, Data Structures, Algorithms, Mathematics
Data Analysis: Exploratory Data Analysis (EDA), Statistical Visualization, Data Cleaning & Transformation
Tools: GitHub, Jupyter Notebook

Certifications

HCIA-AI V3.5 – Huawei Certified ICT Associate in Artificial Intelligence 2024

- Comprehensive certification covering AI fundamentals, machine learning algorithms, deep learning concepts, and enterprise AI solutions