# SWAIRA RIAZ

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## SUMMARY

AIEngineerwith 2+ years of experience developing machine learning solutions for computer vision, natural language proces sing, and predictive analytics. Built end-to-end ML pipelines achieving 90%+ accuracy using Python, TensorFlow, and scikit-learn. Deployed scalable AI systems for healthcare, recommendation engines, and IoT applications. Demonstrated expertise in neural networks, deep learning architectures, and production deployment.

## EDUCATION

**BachelorofScience in Computer Systems Engineering**

IslamiaUniversity o f Bahawalpur | 2022-2026

**Relevant Coursework:** Machine Learning, Data Structures, Algorithms, Database Systems, Software Engineering

## TECHNICAL SKILLS

- **Programming & Development:** Proficient in Python, SQL, C++ with expertise in algorithm development, data structures, and software engineering principles
- **Machine Learning & AI:** Advanced proficiency in Scikit-learn, TensorFlow, Keras, XGBoost, Optuna for model development, hyperparameter tuning, and MLflow for model versioning
- **Deep Learning & Computer Vision:** Specialized in Neural Networks, CNN, Transfer Learning, ResNet architectures with OpenCV for image processing and computer vision applications
- **Data Science & NLP:** Expert in Pandas, NumPy, Matplotlib, Seaborn, Plotly for data mining, statistical analysis, and Hugging Face Transformers for semantic search and intent detection
- **Deployment & Infrastructure:** Skilled in Docker, Kubernetes, Git, GitHub for model deployment, FastAPI, Flask, Streamlit for web development, and ChromaDB for vector database management

## PROJECTS

**AI-PoweredSkincare Recommendation System**

**Technologies:** Python, FastAPI, ChromaDB, ResNet, Docker, Kubernetes, MLflow, Hugging Face, RAG, NetworkX, Prometheus

- Architected ResNet-based image classifier achieving 92% accuracy on 10,000+ HAM10000 skin images
- Implemented RAG pipeline with ChromaDB embeddings processing 500+ skincare ingredients
- Deployed containerized FastAPI application utilizing Docker, Kubernetes, and MLflow monitoring

**Medicine Recommendation System**

**Technologies:** Python, Flask, Scikit-learn, SVM, Pandas, NumPy, Joblib, HTML5, CSS3, JavaScript

- Engineered Support Vector Classifier achieving 89% diagnostic accuracy across 15+ medical conditions
- Processed multi-dimensional symptom data from 6 CSV datasets containing 1,000+ medical records
- Integrated comprehensive recommendation engine providing medications, diet plans, and workout suggestions

**IT Skill Recommender System (SkillSwapGPT)**

**Technologies:** Python, Streamlit, Scikit-learn, KNN, Pandas, Cosine Similarity, Machine Learning

- Developed K-Nearest Neighbors algorithm implementing cosine similarity achieving 88% recommendation accuracy
- Processed 1,000+ IT skills database with case-insensitive matching handling 100+ skill variations
- Optimized r ecommendation engine reducing query processing time by 60% through efficient algorithms

## EXPERIENCE & COLLABORATION

**IEEEVolunteer - GraphicDesigner** | 2022-2024

- Designed 15+ visual assets for IEEE technical events and academic conferences
- Collaborated across 5+ cross-functional team projects demonstrating leadership and communication skills

## CERTIFICATIONS

- MachineLearning using Scikit-Learn - AI BootCamp | Deep Embed | 2024
- Exploratory Data Analysis Workshop - Islamia University of Bahawalpur | 2024
- IoT System Development & Applications - NAVTTC | 2024