Syed Syab Ahmad Shah (Machine Learning Engineering)

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Objective

Motivated software engineering student with a passion for data science, machine learning, and web development. Committed to expanding expertise and staying updated with the latest advancements. Excited to contribute to an innovative team that values challenges. Seeking to make a meaningful impact and grow professionally within a progressive organization.

Educations

Bachelor's (Software Engineering) — Charbagh, Swat
University of Swat — Aug-2020 to Nov-2024

Intermediate (Pre-Engineering) — Haji Baba, Mingora
GOVT Higher Secondary School — 2018 to 2020

Matriculation (Science) — Kokrai, Swat
Islamic University Model High School — 2016 to 2018

Skill Summary

- **Languages:** Python, SQL, JavaScript, Reacts.JS
- **Frameworks:** Scikit-Learn, Tensorflow, Matplotlib, OpenCV, TKinter, Keras, Streamlit.
- **Tools:** Jupyter Notebook, Git, GitHub, Docker, Pandas, Numpy, Imblearn, BioPython, PyTorch, NLP,
- **Platforms &:** computer vision, machine learning, text classification, embedding, entity recognition, recommendation systems, Data cleaning, Data visualization, Data Augmentation, MySQL, PostreSQL, Data Pipelines, Groq, Sentence Transformer, LLM, Railway, Varcel.
- **Soft Skills:** Communication, Collaboration, Problem-solving, Adaptability, Time management, Continuous learning.
- **English Proficiency** EF SET (68/100) – C1 Advanced (Equivalent to IELTS 7.0 - 8.0)

Professional Experiences

Python Developer — Nov 2024 – Jan 2025
Suvastutech — Swat, Pakistan

- Collaborate on developing machine learning models and algorithms to solve real-world problems.
- Assist in data preprocessing, feature engineering, and model evaluation to enhance predictive accuracy.
- Participate in team discussions to refine project goals and contribute to innovative AI solutions.

Machine Learning Engineer and COO — Apr 2023 – Dec 2023
AI3 (Start-Up)

- Developed an innovative module using generative AI that enables interactive chat capabilities with PDFs, enhancing document accessibility and user engagement.
- Led the design and deployment of machine learning models, ensuring their integration into company products to optimize functionality and user experience.
- Managed cross-functional teams, coordinating efforts between engineering, product development, and marketing to align with strategic business goals.
- Oversaw day-to-day operations and contributed to high-level decision-making, driving the company's growth and technology strategy.

Internship Experiences

Machine Learning Engineer, SkillBuild — July 2024 Sep 2024
Coimbatore North, Tamil Nadu, India — Remote

Machine Learning Engineer, InternCareer Nov 2023 - Dec 2023
Managaluru, Karnathka, India Remote
Machine Learning Engineer, CodeAlpha OCT 2023 - Nov 2023
Lucknow UP, India Remote

Data Science Intern, CodeSoft Sep 2023 - OCT 2023
West Bangal. India Remote

Front-End Developer, Interns.pk Aug 2023 - Sep 2023
Sindh Pakistan Remote

Web Developer, LetsGrowMore July 2023 - Aug 2023
India Remote

Web Developer, INeoron.ai July 2023 - Aug 2023
India Remote

Projects

AI Video Super-Resolution System (Freelancing) **For Client**

- Built a real-time video enhancement pipeline using Real-ESRGAN + TensorRT that upscales videos 2x-4x (SD to 4K) achieving 98.6 VMAF scores under 35-second processing constraints with FastAPI microservices and GPU acceleration.
- Developed scalable architecture with Docker, Redis, AWS S3, and multi-threaded processing (16-32 threads) using OpenCV, FFmpeg, and CUDA optimization for automated video scoring (LPIPS, PieAPP, VMAF) and deployment.
- Optimized AI inference by converting PyTorch models to ONNX/TensorRT, implementing hybrid AI+interpolation processing, reducing computation time 60% while maintaining broadcast quality for competitive video enhancement tasks.

Secure your school **For client**

- SYS is a real-time school security system using YOLOv8 for weapon detection and SmolVLM-500 with LLaMA.cpp for generating image-based event descriptions.
- Integrates deep learning, vision models, and local LLMs to create an intelligent, offline-capable surveillance solution for educational institutions.

Face Recognition using OpenCV **Developed under 5 Hours for client**

- Created a robust face detection system using OpenCV to identify and localize multiple faces in real-time images.

CVChat **Developed under 12 Hours for company**

- Developed a Django-based CV chatbot leveraging Sentence Transformers for semantic understanding and intelligent user interaction.
- Deployed a full-stack solution with a PostgreSQL backend (Railway) and Vercel-hosted frontend, integrating CORS, REST APIs, and file handling.
- Implemented resume parsing, embedding generation, and real-time Q&A, enabling natural language queries over uploaded documents. (Groq)

Mockster.ai **Developed under 3 days**

- Mockster.ai is an AI-driven interview simulator that offers real-time question generation and video-based responses.
- It provides instant feedback using speech and text analysis to help users improve communication and confidence.
- Built with React.js, it integrates STT, TTS, and secure JWT-based authentication for a realistic experience.

QuickHire.ai **Developed under 3 days**

- QuickHire.ai is an AI-powered recruitment toolkit built with React.js and Supabase.
- It streamlines hiring through smart tools like AI email writing, cover letter generation, and job ad optimization.
- Designed for speed and personalization, it showcases expertise in full-stack development and AI integration.

PySnipify-ML

- Developed PySnipify-ML, a VS Code extension designed to streamline machine learning development by providing ready-to-use code snippets.
- Integrated a comprehensive collection of Python snippets covering essential tasks such as string manipulation, loops, and data structures to improve coding efficiency.
- Added pre-built snippets for key machine learning workflows, including data preprocessing, model training, and evaluation, enhancing developer productivity and accelerating project deployment.

Retrieval Augmented Generation (Suvastutech)

- Developed a Retrieval-Augmentation Generator (RAG) using Python, PostgreSQL, HTML, CSS, and JavaScript for an e-commerce website to enable intelligent search and question-answering functionality.
- Implemented TF-IDF vectorization with 100 vector dimensions and stored them in PostgreSQL using the pgvector extension for efficient similarity searches.
- Configured IVFFlat indexing and TSVectors in PostgreSQL for optimized vector-based retrieval and natural language search capabilities.
- Integrated Groq API to enable product-specific retrieval and question answering, enhancing the e-commerce experience with AI-driven insights.

Breast Cancer Classification

- Utilized a hybrid model of LSTM, CNN, and RNN for accurate classification of breast cancer from imaging data.

Classification of Wine Type

- Developed a DNN to classify different wine types based on physicochemical properties for enhanced quality assessment.

DataFit (Final Year Project) Jan – 2024 to Nov - 2024

- Utilized pre-built functions for data cleaning, including handling missing values and processing categorical and text data.
- Employed pre-built methods for data normalization and standardization to improve model performance.
- Applied feature extraction, transformation, and selection techniques using pre-built utilities to enhance model accuracy.

Talk to PDF

- Developed a Streamlit application leveraging OpenAI Embeddings API to enable interactive question-and-answer functionality with PDF documents.
- Implemented a generative AI solution that allows users to extract specific information and insights from PDFs through natural language queries.
- Improved document accessibility and usability, supporting educational and professional users in efficiently extracting and compiling information from large PDFs.

Chat Bot using Generative AI

- Developed a chatbot application using Streamlit and OpenAI's generative AI API, providing a conversational interface for users to ask questions and receive answers.
- Emulated the functionality of Chat-GPT, offering a natural language processing experience with real-time responses to user queries.
- Showcased proficiency in integrating generative AI models into practical applications, demonstrating strong skills in AI-driven user interaction.

Research (Not Published)

Classification of Heart Disease

- Developed a model combining CNN and RNN with LSTM layers to predict heart disease based on medical data.

Classification of Coronary Artery Disease

- Implemented a CNN-based approach for the classification of coronary artery disease from patient datasets.

Classification of Malaria Cells

- Designed a CNN model to classify malaria-infected cells from microscopy images for improved diagnostic accuracy.

Lungs Disease Classification

- Combined CNN and RNN architectures to classify lung diseases from imaging data, facilitating faster diagnostics.

Diabetic Retinopathy Detection

- Developed a deep learning model for detecting Diabetic Retinopathy (DR) using CNN architectures, analyzing retinal fundus images for early diagnosis.

- Employed image preprocessing techniques like contrast enhancement, denoising, and augmentation to improve model accuracy and robustness.

Certificates

- **Digital Marketing**, Hobspot Academy — July 2024
- **Introduction to Git and GitHu**b, Gymnasium — July 2024
- **Introduction to SQL**, DataFlair — July 2024
- **The Python Developer Essential Immersive Bootcamp**, Udemy — July 2024
- **Data Visualization with PowerBI**, Udemty — Jun 2024
- **Prompt Engineering for Chat GPT**, Great Learning — Jun 2024
- **Basic of Generative AI**, OpenWeaver — Nov 2024
- **Learn to Code in Python 3**, Udemy — Oct 2024
- **NumPy and Pandas**, DataFlair — Oct 2024
- **Data Manipulation with Python,** Udemy — Aug 2024
- **JavaScript Essentials 1**, Cisco — Aug 2024
- **Public Speaking,** Udemy — Aug 2024
- **Machine Learning Algorithms**, Great Learning — May 2024
- **Certificate of Appreciation**, NIC Swat — Jun 2024

Bootcamps

- **B.E.S.T Build Entrepreneurship Skill Training,** Red International — Mar 2024

Badges

- **Discover Data Analysis**, Microsoft
- **Building with Power BI**, Microsoft
- **Data Science: Pandas**, Leet Code
- **Android Studio**, Google for Developers
- **JavaScript Essential 1**, Cisco
- **Learning Enthusiast**, Open Weaver INC

References

- Available upon request