Syed Danish Abbas

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Educational Qualification

Year	Degree	University	CGPA
2023-Present	B. Computer Science	National University of Sciences and Technology	3.24/4.0

Professional Summary

Computer Science student with expertise in core computing fundamentals, including Python development for AI/ML and data processing/analytics, as well as web development using JavaScript and associated frameworks. Possess over one year of professional experience in the educational niche, building research-based products for OneScreen. Skilled at understanding niche requirements, delivering tailored solutions, and ensuring smooth coordination between teams and clients.

Professional Experience

Software Developer

Onescreen *June 2024-Present*

Contributed to the development of two major educational products for OneScreen, an education-focused company.

Lesson Builder *Link: https://builder.lessn.ai/*

An AI powered tool for creating presentations for instructors based on their subject and grade requirements.

Role:

- Handled both backend and frontend development, along with deployment.
- Leveraged large language models (LLMs) for content generation.
- Employed Retrieval Augmented Generation (RAG) techniques to produce personalized content according to needs.
- Conducted research on instructor requirements in the USA and integrated features based on their feedback.
- Provided ongoing maintenance and continuous development to enhance product performance.

Technologies used:

- Python (Flask) for backend development.
- React for frontend development.
- Nginx for deployment and server configuration.
- Redis, Pandas, and SQL for data storage and processing.
- Transformers library and OpenAI SDK for leveraging LLMs.

Suprnotes *Link: https://suprnotes.ai/*

An ML-based tool that generates comprehensive notes from video lecture content provided by students.

Role:

- Resolved the challenge of slide segmentation by accurately recognizing different portions of slides.
- Researched, explored, and compared multiple computer vision models for the task.
- Curated a custom dataset for fine-tuning models to improve performance.
- Conducted extensive testing, analysis, and comparison of results across algorithms to achieve maximum accuracy.
- Successfully fine-tuned and deployed the model currently being used for slide segmentation.

Technologies used:

- Python libraries such as OpenCV, NumPy, PyTorch, Pandas, and Matplotlib.
- Various computer vision models including YOLO_v8 (You Only Look Once), SAM (Segment Anything Model), and Google Cloud Vision API.
- Makesense.ai for dataset annotation and labelling.

Personal Projects

EduPredict – Student Dropout Prediction Tool *Link: https://edupredict.online/*

- Developed an ML based web app for analyzing student data, highlighting at risk, and providing advice for improvement.
- The workflow for model training involved data cleaning, preprocessing (scaling, one-hot encoding, and handling class imbalance with SMOTE), and feature selection using Random Forest to identify the top 8 most impactful predictors. I then trained and optimized a Neural Network (MLPClassifier) using GridSearchCV for hyperparameter tuning and further improved performance by adjusting the probability threshold for balanced classification. The final model achieved **83.73% accuracy**, **70.23% precision**, **85.56% recall**, and **77.14% F1-score** on the test set.
- Currently authoring a paper detailing the complete workflow of the application, from model development to its integration within a web application.

  Technologies used:
  - Python(flask) for backend development.
  - Utilized Pandas, Tensorflow, Scikit-learn, and NumPy for data processing and model training.
  - React for frontend development.

NextRep – Fitness Tracker and Scheduler *Link: https://nextrep.site/*

- Collaboratively worked on a tool where users can schedule and track their workouts and diets and monitor their workout/diet progress, with support for setting goals.
- Implemented a chatbot for providing suggestions to the user, based on their details.
- Used different Apis to help users find nearby fitness centers.

  Technologies used:
  - MongoDB, Express/Node and React.

Enigma – Adaptive Maze Solver *Link: https://github.com/12Danish/Enigma*

- Developed a maze solver using Breadth-First Search (BFS) that intelligently rotates maze cells at specific positions to optimize paths and solve mazes that have no solution in their original configuration.

  Technologies used:
  - Java

Custom Git *Link: https://github.com/12Danish/custom_git*

- Replicated core Git functionality, including initializing a repository, handling objects, listing trees, writing trees, creating commits, and cloning repositories.

  Technologies used:
  - Rust

More projects: https://danishabbas.site/

Societies Participation

Deputy Director Fundraiser
Chadar *September 2024-May 2025*

Chadar is a community service society at NUST dedicated to supporting the underprivileged through education, food drives, clothing donations, and fundraising for medical and educational needs. As Deputy Director, my role involved leading donation collection drives with my team, ensuring transparency in both the collection and distribution of funds.

Marketing Volunteer – Tech Avant Garde (TAG) *May 2025*
Google Developers Group NUST

Assisted in event marketing and contributed to attracting a wider audience.

Relevant Online Courses

Machine Learning Specialization (DeepLearning.AI)
Harvard CS50's Web Programming with Python and JavaScript

Technical Skills

Programming Languages: Python, JavaScript, Typescript, Java, Rust
AI and ML: TensorFlow, PyTorch, Scikit-learn, LLMs, Transformers, Computer Vision.
Data Storage and Management: Relational (MySQL/PostgreSQL/SQLite) databases, Non-Relational (MongoDB, Redis etc.)
Web Development libraries/frameworks: Django, Flask, MERN.
Data Analysis & Visualization: Pandas, Power BI, Tableau, Matplotlib

Soft Skills

Teamwork and Collaboration, Leadership and Management, Effective Communication, Confidence and Public Speaking, Proactivity and Initiative, Positive Attitude and Energy, Problem-Solving, Adaptability, Critical Thinking.