Alina Arshad

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https://scholar.google.com/citations?user=P9mgXL8AAAAJ&hl=en

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Summary

Passionate and results-driven AI Research Engineer with practical experience in machine learning, deep learning, large language models (LLMs), vision language models (VLMs) and computer vision. Possesses a solid background in computer science and software engineering, with a strong commitment to applying AI technologies to solve complex, real-world problems. Skilled in designing, developing, and optimizing intelligent systems using Python and leading-edge frameworks. Incorporating research into impactful solutions. Looking for a challenging role in a forward-thinking organization where I can contribute to cutting-edge AI initiatives and grow as a researcher and innovator.

Education

National University of Computer and Emerging Sciences, FAST NUCES Karachi jan 2022 – dec 2023
MS in Computer Science

- GPA: 3.77/4.0
- **Coursework:** Computer Vision, Cloud Computing, Adv Machine learning, Software Product Management

Iqra University BS in Software Engineering Aug 2016 – May 2020

- GPA: 3.51/4.0
- **Coursework:** Machine learning, Software Project Management, Dataware house and data mining,Visual software analytics, Visual programming languages

Skills

- **Programming Languages:** Python, C++, JavaScript
- **AI ML Frameworks:** PyTorch, TensorFlow, CUDA, scikit-learn, , OpenAI, GPT
- **Deep Learning NLP:** Large Language Models (LLMs), Hugging Face Transformers, Natural Language Processing, Computer Vision, GANs
- **Tools Platforms:** Jupyter, Git, Docker, VS Code
- **Databases:** MySQL, NoSQL
- **Web API Development:** Flask, Django, FastAPI, Node.js

Experience

Lecturer, Fast – NUCES August 2024 – Present

- Serving in the Software Engineering department, delivering lectures on core topics such as Database Systems, Programming Fundamentals, and Artificial Intelligence, Computer vision, and Software Quality Assurance.
- Designed practical exercises and mentored students through code and algorithm understanding

AI Engineer & Research Assistant, Syslab.ai – FAST NUCES August 2023 – July 2024

- NLP research on an HEC sponsored research project titled Context-Aware Identification of Mixed Critical Activities for Surveillance Applications in Smart Cities.
- Lead a team to design and fine-tuned models such as LLM, VLMS, transformers, and YOLO to assess their performance and functionality.
- Construct and annotate a custom dataset for the project covering the criticality of events in real-time.
- Wrote the first draft of the research paper on the process of dataset creation for this project.

Teaching Assistant, FAST NUCES August 2022 - Dec 2023

- Assisted in course delivery, grading, and managing course content.
- Provided academic support and guidance to undergraduate students.

Software Engineer / Project Coordinator, Iqra University March - December 2021

- Participated in the implementation of SAP HANA across university campuses.
- Conducted software testing for mobile apps, websites, and LMS platforms.
- Define test objectives, create test plans, cases, and scripts.
- Identified and documented defects; collaborated with developers for resolution.
- Coordinated project meetings and documentation as project coordinator.

Software Test Engineer, LearningCert February - March 2021

- Conducted manual testing for web and mobile applications.
- Reported software bugs and wrote/ran test cases.

Software Quality Assurance Engineer, Afiniti July 2020 - November 2020

- Executed manual test cases and reported software defects.
- Participated in QA processes during software development life cycle.

Projects and Publications

Publications

- **Plant Disease Detection Using a Convolutional Neural Network**, published in *Journal of Independent Studies and Research in Computing (JISR-C)*, 2024. [ORCID]
- **Image-Based Criticality-Aware Fire Detection**, presented at the *17th International Conference on Frontiers of Information Technology (FIT), IEEE*, 2024.

Projects

- **Context-Aware Identification of Mixed-critical Activities for Surveillance Applications in Smart Cities** — An intelligent computer vision system for real-time object detection and tracking. Using optimized deep learning models to accurately identify people, vehicles, and environmental objects in live video feeds. Integrated with live camera streams for dynamic scene understanding. Review the literature of different research papers related to the idea of the research. Performed fine-tuning of different LLMs, VLMs, Multi-Modal Transformers, and YOLO architectures. Construct and annotate a custom dataset for the project covering occurence of mixed critical events in real time through videos and images. Used Python, Numpy, Pytorch, CUDA, LINUX, Pandas, Keras, Scikit-learn.
- **Plant Disease Detection** — Developed a convolutional neural network (CNN)–based solution to detect plant diseases from leaf images. Achieved high classification accuracy using custom-augmented datasets and trained models on TensorFlow.
- **Virtual Notebook** — Designed a digital notebook mobile application to manage academic and personal notes. The features included subject-wise categorization and note search.

Certifications

Generative AI Coursera, 2022

Machine Learning Coursera, 2022

Face Recognition using YOLO Coursera, 2022

PowerBI using YOLO Microsoft, 2021

Languages

English: Fluent

Urdu: Native