Ukasha Nadeem

Machine Learning Engineer

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A passionate Computer Science graduate with solid skills in Python, Machine Learning, and Deep Learning. Experienced in developing intelligent, data-driven systems and focused on solving real-world challenges using AI. Motivated to grow professionally and contribute meaningfully in an innovative tech environment.

AREA OF EXPERTISE

Python	AI and Machine Learning Integration	Deep Learning
Microsoft Excel	Facial Recognition Technologies	Power BI
Web Development (HTML/CSS/JS)		SQL

EDUCATION

Bachelor in Computer Science   **Sep 2021 - June 2025**

University of Haripur, KPK, Pakistan
- Major in Computer Science.
- Thesis & Project on "Spine Disease Detection System".

Intermmediate in Faculty of Computer Science   **May 2019 - July 2021**

The Hope College of Sciences & Commerce
- Studied about Basics of Programming Languages

PROFESSIONAL EXPERIENCE

Python Development Intern | Pakistan Ordnance Factories (POF)   **July 2024 - Sep 2024**
- Collaborated on internal tools and automation scripts using Python for improved efficiency and data handling.
- Developed small-scale code components and modules under the guidance of senior developers.
- Participated in code debugging, testing, and documentation for existing Python-based applications.
- Gained practical exposure to real-world software development workflows and version control (e.g., Git).
- Strengthened analytical and problem-solving skills through daily programming tasks and team collaboration.

Internship | Pakistan State Oil (PSO)   **Jan 2025 - March 2025**
- Completed an 12-week internship at PSO with a focus on Python development and enterprise software systems.
- Worked on small-scale projects involving Python scripting and automation tasks.
- Gained hands-on experience with SAP software, learning its role in business process management.
- Participated in debugging, software testing, and documentation tasks.
- Improved technical and problem-solving skills through real-world development scenarios.

PROJECTS

- **Final Year Project: Spine Disease Detection System Using DenseNet121 (2025)**
  Tech Stack: Python, PyTorch, Scikit-Learn, Matplotlib, Seaborn, Flask
  Developed an AI-based medical imaging system to detect spine diseases from DICOM images using deep learning techniques.
  - Implemented and fine-tuned a DenseNet121 deep learning model for multi-class classification of spinal disorders.
  - Preprocessed and managed over 8,000+ DICOM images using Python libraries like pydicom, OpenCV, and torchvision.
  - Deployed the trained model through a web-based interface to enable user-friendly interaction and real-time predictions.

- **Potato Leaf Disease Detection System Using CNN (2025)**
  Tech Stack: Python, PyTorch, Matplotlib, Seaborn, Flask
  Developed a CNN-based system to classify potato leaf diseases from images with high accuracy.
  - Designed and trained a Convolutional Neural Network (CNN) model to classify leaf conditions into Early Blight, Late Blight, and Healthy.
  - Achieved 98.9% classification accuracy on a labeled dataset of potato leaf images.
  - Integrated the model into a web interface for real-time image upload and disease prediction.

- **Rice Growth Rate Using Random Forest (2025)**
  Tech Stack: Python, Matplotlib, Seaborn, Flask
  Built a machine learning model to predict rice growth rates using environmental features.
  - Developed and trained a Random Forest Regression model using features like temperature, rainfall, humidity, light intensity, and soil pH.
  - Achieved high prediction accuracy and improved the understanding of key environmental factors affecting rice growth.
  - Integrated the model into a web interface, allowing users to input values and receive real-time growth rate predictions.

- **2-Bit Security System (2023)**
  Tech Stack: 7400-series logic ICs, breadboard, LEDs, switches, 5V DC supply, and multimeter
  Built a simple access control system using logic gates and 7400-series ICs on a breadboard.
  - Designed a 2-bit input security system using fundamental logic gates like AND, OR, and NOT.
  - Implemented the circuit using 7400-series ICs and built it physically on a breadboard.
  - Verified input combinations to control access, demonstrating practical knowledge of digital logic and hardware design.

- **Driver Drowsiness Detection System (2024)**
  Tech Stack: Python, OpenCV, Mediapipe, Playsound
  Designed a real-time system to detect signs of driver drowsiness using facial cues.
  - Implemented eye and mouth state monitoring using OpenCV and facial landmark detection in Python.
  - Triggered a beep alert when eyes remained closed for 5 seconds or mouth opened 5 times, indicating possible drowsiness.
  - Displayed detection results and alert status on a Python-based interface for real-time monitoring.

- **Hand-Based Mouse Control System (2024)**
  Tech Stack: Python, OpenCV, Mediapipe
  Developed a gesture-controlled virtual mouse system using computer vision for full computer interaction.
  - Implemented YOLOv6 for real-time hand gesture detection using a webcam as the input device.
  - Mapped specific hand gestures to mouse functions like left-click, right-click, scrolling, zooming, and brightness control.
  - Enabled full computer control through gesture recognition, replicating standard mouse behavior using only a camera feed.