

# Muhmmad Shaban

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GitHub — LinkedIn

## Summary

Enthusiastic Computer Science undergraduate with a solid background in Machine Learning and Data Analysis. Currently seeking a Machine Learning internship to contribute skills and gain valuable real-world experience. I am looking for an internship as a Generative AI Engineer, focusing on the use of LangChain and Streamlit to develop innovative AI solutions.

## Technical Skills

**Languages:** Python, C++, HTML, CSS, JavaScript, PHP

**Libraries and Frameworks:** Scikit-learn, NumPy, Pandas, Seaborn, Matplotlib, SHAP, LIME, Flask, Streamlit, FastAPI, LangChain, Groq

**Tools:** Git, VS Code, Jupyter Notebook

**Domains:** Machine Learning (Supervised Learning, Neural Networks, Natural Language Processing), Data Analysis (Pandas, NumPy, Matplotlib), Web Development (Flask, Streamlit, FastAPI), SQL (MySQL), Vector Databases

## Projects

### AI Chatbot Application Development

Creating an AI chatbot application uses Streamlit for the front end and FastAPI for the backend, facilitating user interaction with advanced AI models such as OpenAI GPT-4 and Groq LLaMA. Designed a user-friendly interface to input system prompts and queries and integrated optional web search functionality for enhanced responses. Using Python, requests, and pydantic for efficient processing and structured response display.

### Helmet Detection using YOLOv8

Developed a computer vision-based system using YOLOv8 to detect helmets on bike riders for road safety applications. Using libraries such as OpenCV for image processing and TensorFlow for model training.

### Ghibli Image Converter

Created a Python-based tool to stylize user images with Studio Ghibli-inspired themes using deep learning image transformation techniques. Implemented using libraries like TensorFlow and PIL (Python Imaging Library) for image manipulation. The tool allows users to upload images and apply various artistic filters, resulting in unique Ghibli-style artwork.

### Auto Spray Painter Machine Prototype

Designed and built a prototype for an automated spray painting machine using Arduino and mechanical components for uniform painting operations. The project involved programming the Arduino with C++ and utilizing libraries such as Servo and Stepper for precise control of the painting mechanism. The prototype is currently pending further testing and optimization for commercial use.

## Education

### Bachelor of Technology in Computer Science and Engineering

July 2024 - July 2028

COER University, Roorkee

CGPA: 9.18 (First Semester)

### Intermediate

1st Division

Atal Utkrisht Government Inter College, Roorkee

## Achievements & Extracurriculars

### IEEE Conference Presentation

2025

Delivered a presentation as the main author at an IEEE-recognized international conference, showcasing my original research paper: "*EDS-DPCXT: Efficient Data Security Using a Deque-Based Product Cipher and XOR-Based Transformations*" — a novel approach to data security integrating cryptographic techniques. The presentation highlighted the effectiveness of the proposed method in improving data confidentiality and integrity.

### International Conference Presentation

2025

Presented as the main author the research paper: "*Spam Detection with AdaBoost and Random Forest*" at the International Conference on Modern Trends in Computers and Electronics (ICMCE-2025). This paper explores the application of ensemble learning techniques for effective spam detection, demonstrating significant improvements in classification accuracy.

### ML-Based Research Publications

Accepted

Submitted additional machine learning-based research papers to reputed conferences and edited book volumes, contributing to the advancement of knowledge in the field.

**Uttarakhand State Badminton Player** – Competed in state-level tournaments representing the state.

**Tech Events** – Actively involved in coding contests and workshops at university.

**Title of "Cheetah" at DcodersSquad (Tech Group of COER)** – Recognized for outstanding performance and speed in projects and problem-solving.

**Appreciation from HOD of CSE** – Recognized for outstanding efforts and meaningful contributions to both DcodersSquad and the CSE Department.

## Other Information

**Languages Known:** English, Hindi

**Interests:** Research, AI Ethics, Sports (Badminton), Web Development