

Alamgir Chowdhury

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Professional Summary

Computer Science graduate with an interest in AI Engineering and software development with expertise in machine learning, AI system maintenance, and MLOps, specializing in end-to-end model deployment, performance monitoring, and iterative improvement, along with both frontend, backend, and mobile app development. Proven experience in federated learning, model retraining, and scalable AI infrastructure. Adept at research, model deployment, and end-to-end application development. Passionate about building intelligent systems with real-world impact. Published and ongoing work in federated learning, medical AI, and NLP.

Education

- BSc in Computer Science and Engineering** – Brac University, Bangladesh 2021 – 2025
- CGPA: 3.54/4.00
 - Thesis: Involutional Neural Network for Federated Plant Disease Classification
 - Courses: Machine Learning, Computer Vision, Web Technologies, Data Structure and Algorithms

Work Experience

- Co-Founder/Software Engineer** Owlreaders (not longer active) 2024 – 2025
- Built and designed end to end saas platform with an Analytics dashboard
 - Used Django and Django-Rest-Framework for API integration and Backend development. Used HTML, CSS, along with async JS and React JS for the frontend, and Python libraries for data visualization.
 - Implemented Ollama for LLM integration and implemented HuggingFace open-source book recommendation system for better user experience.
- Part Time Web Developer** – Robotics Club of Brac University 2024 – 2025
- Developed and maintained the club website
 - Created admin panel, recruitment and registration portal using Django web framework, Vanilla JS, and React JS
 - Created and maintained the Competition website with registration websites with Django web framework and Basic HTML, CSS and JavaScript.
- Part Time AI Engineer** – BracU Duburi 2023 – 2024
- Created custom image dataset with annotations for image classification and detection using OpenCV and CVAT
 - Build custom lightweight neural network models for Image classification and detection, suitable for running on edge devices
 - Used custom models as backbone model for various YOLO architectures, ensuring smooth autonomous run of the rover.

Projects

- Federated Plant Disease Classifier (Thesis)** – Involution, TensorFlow, Federated Learning 2025
- Designed a novel involutional neural network model for decentralized plant disease diagnosis.
 - Used Federated Averaging to protect farm data privacy; paper under review in HCC journal.
- Plant Disease Detection App** – Django, React.js, TensorFlow 2025
- Full-stack web app to identify plant diseases using MobileNet-based CNNs.
 - Live image upload, preprocessing, and server-side inference; 97% accuracy achieved.
- Resume Parser & JD Matcher** – Python, BERT, FastAPI 2025
- Built NLP pipeline for extracting experience and skills from resumes using Named Entity Recognition.
 - Matched job descriptions using semantic vector similarity (BERT embeddings).
- Chest Disease Detection (Research)** – CNN, X-ray, Grad-CAM 2024

- Trained CNN on ChestX-ray14 dataset to detect pneumonia, TB, and other diseases.
- Implemented Grad-CAM for model interpretability; manuscript in preparation.

Real-Time Object Detection System – YOLOv7, OpenCV

2024

- Trained YOLOv7 on custom dataset for safety gear detection in industrial sites.
- Deployed with OpenCV for real-time inference.

Certifications

- Deep Learning Specialization – Coursera (Audited)
- Mathematics for ML and Data Science Specialization – Coursera (Audited)
- IBM Full Stack JavaScript Developer – Coursera (Audited)

Skills

Languages: Python, JavaScript, C, SQL, HTML, CSS

Frameworks: Django, React.js, FastAPI, LangChain, TensorFlow, PyTorch

Libraries: OpenCV, Scikit-learn, Keras, NumPy, Pandas

Dev Tools: Git, Docker, Heroku, Streamlit, Postman, Jupyter

Concepts: CNNs, Federated Learning, Transfer Learning, NLP, XAI, REST API

Languages

English (Fluent), Bengali (Native)