Nahin Alam

Computer Vision Engineer

CONTACT

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PROFILE SUMMARY

Computer Vision and Machine Learning Engineer with over a year of academic and industry experience in vision-based systems, robotics, and automation. Expertise in Python, PyTorch, and OpenCV, with a solid foundation in IoT and embedded systems. Adept at developing efficient image-processing pipelines, performing research-driven development, and collaborating with interdisciplinary teams. North South University graduate with strong communication and leadership skills.

PROFESSIONAL EXPERIENCE

Technical Specialist

The Data Island

- Developed visual automation tools that enhanced data processing efficiency by 25%.
- Conducted technical research and documentation to support ML-based development.
- Co-developed the company platform, improving visual UX/UI for international clients.

Research Assistant

Cyber Physical System Lab, North South University

- Designed and tested computer vision–based systems for PMU (Phasor Measurement Unit) devices.
- Contributed to the Synchropashor project ensuring accurate visual diagnostics.
- Built robust testbed environments for signal tracking and system evaluations.

Research Assistant

MI Lab, North South University

- Assisted in training deep learning models for vision-based classification and detection tasks.
- Contributed to dataset preprocessing and augmentation strategies for research prototypes.
- Supported publication efforts and experimental evaluations on image classification.

Lab Instructor

MI Lab, North South University

- Guided undergraduate students in foundational computer science and lab courses.
- Provided mentorship and assistance in programming, data structures, and ML fundamentals.
- Evaluated lab reports, assignments, and helped debug practical code-based solutions.

EDUCATION

Bachelor of Science in Computer Science and Engineering

North South University

- CGPA: 3.81
- Summa Cum Laude
- Recognition for Extended Research Paper

TECHNICAL SKILLS

- Programming Languages: Python, JavaScript, C++
- Web Technologies: HTML, CSS, React.js, Node.js, FastAPI
- Machine Learning Frameworks: Pytorch, FastAI, OpenCV, Langchain
- Tools & Platforms: Git, Docker, Linux OS
- Other: Software Testing, IoT Technologies, ARM Microcontrollers

CERTIFICATES

Responsive Web Design

freeCodeCamp
Core concepts of web development with HTML, CSS, and accessibility.

Foundations of AI

Google Digital Garage
Fundamentals of artificial intelligence and practical applications in real-world scenarios.

LEADERSHIP & PROJECTS

Team Leader

e-Yantra Robotics Competition
September 2021 – December 2021

- Led a team of four in designing and programming a robotic system to complete specified tasks.
- Fostered effective communication and collaboration among team members, resulting in a successful project submission.
- Utilized Python and Linux OS to develop and test robotic algorithms.

Participant

IEEE Robotics for Climate Change Competition
March 2022 – June 2022

- Engaged in developing IoT-based solutions using ARM microcontrollers to address climate change challenges.
- Collaborated with international teams to share knowledge and develop innovative approaches.
- Presented project findings to a panel of experts, receiving commendations for technical proficiency.

Skin Lesion Segmentation
Capstone North South University

- Implemented SAM models for medical image segmentation.
- Worked on preprocessing and augmentation of dermoscopy datasets.
- Evaluated segmentation performance using Dice coefficient and IoU metrics.

Hateful Meme Classification (Research Paper – BodhiCAT)

- Built a multimodal system combining text and image features for hate speech detection.
- Fine-tuned transformer models (e.g., ViLT, CLIP) for Bangla-English meme datasets.
- Contributed to model architecture and paper writing for EMNLP 2025 submission.

Meta Glass Reverse Face Search (Prototype Tool)

- Developed a facial search application integrating computer vision and automation.
- Combined OpenCV, face embeddings, and PimEyes API with Selenium-based fallback.
- Applied facial matching to identify individuals from photo inputs across the web.

Legal RAG Chatbot (AI + Law Project)

- Built a Retrieval-Augmented Generation (RAG) chatbot using LangChain and Gemini Pro.
- Processed legal case notes, generated vector embeddings with FAISS and MiniLM.
- Designed Gradio-based chat interface for interactive legal question-answering.
- Integrated JSONL document loading, text chunking, and citation-based prompting.

SOFT SKILLS

- Problem-Solving
- Adaptability
- Effective Communication
- Team Collaboration
- Time Management
- Leadership

LANGUAGES

- English: Fluent
- Bangla: Native
- Hindi: Conversational

REFERENCES

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