

M A BATIN

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Summary

I am a seasoned Machine Learning Engineer specializing in Computer Vision (CV) with a strong interest in robotics. My expertise lies in deploying cutting-edge deep learning models for real-time object detection, segmentation, object tracking, and activity recognition, both on cloud and edge devices. I'm dedicated to driving innovation and success at the intersection of CV and robotics, pushing the boundaries of autonomous systems.

Professional Experience

Research Assistant, MAIM Lab

University of Dhaka

September 2024 – Present

Dhaka, Bangladesh

- A 50 Million Dollar project of the "Welcome Leap In Utero" program. Working on Translation of a Wearable Fatal Movement Monitor towards Stillbirth Prevention. This is a collaborative work of "Imperial College of London", "University Collge Dublin" and "University of Dhaka"

Data Scientist, Executive

SSL Wireless

January 2024 – August 2024

Dhaka, Bangladesh

- Working in a dynamic environment to solve machine learning challenges
- Working as a primary developer for a CV project of a Multi-national client, overseeing from model development to deployment
- Contribute to multiple computer vision, OCR and ML based projects
- Attend corporate client meetings for clarification of client specific requirements

Machine Learning Engineer

Headless Technologies Ltd.

February 2023 – October 2023

Dhaka, Bangladesh

- Collaboration with a multi-national team to develop and upgrade deep learning-based fall detection system.
- Manage software updates to add new features, close security holes and resolve defects.
- Deployment of state-of-the-art deep learning models and frameworks for activity recognition task

Machine Learning Intern

Headless Technologies Ltd.

January 2023 – February 2023

Dhaka, Bangladesh

- Received mentorship for handling state-of-the-art project and multi-national clients.

Education

University of Dhaka, Bangladesh

Bachelor of Science in Robotics & Mechatronics Engineering

January 2018 – March 2023

CGPA: 3.30/4

- Fazlul Haque Muslim Hall Scholarship (Freshman year)
- 1st place in the Student project category in a poster competition at the seminar on "Robotics in Bangladesh: Academia and Industry Initiatives"

Projects

Wheat Phenotyping | Python, Shellsript, PyTorch, MMDetection, PyQt5 [Git](#)

August 2022 – Ongoing

- A framework for providing various phenotyping tasks using Computer Vision
- Deep learning-based model inference for wheat yield estimation from field imaging

Portialyze Carevision | Python, Activity Recognition, PyTorch, YOLOv8, PyQt5 [Website](#)

January 2023 – Ongoing

- Real-time image analysis and IoT cloud system using AI (Artificial Intelligence)
- Human Activity Recognition in real world using YOLOv8 and PoseC3D

STPT-based Activity Recognition | Python, PyTorch, MMAction2 [Git](#)

July 2023 – Ongoing

- Human activity recognition based on Spatio-Temporal Polychromatic Trajectory
- Unified framework for train, test and inference activity recognition DL models.

gRPC server for object detection | Python, gRPC, protobuf, PyTorch, YOLO [Git](#)

March 2024

- A gRPC based server application that can handle both unary and streaming requests with images for object detection, using YOLOv8 model.

gRPC client for object detection | Python, gRPC, OpenCV [Git](#)

March 2024

- A Python client for communication with gRPC based server for both unary-unary and streaming object detection requests

Publications

Batin, M. A., Islam, M., Hasan, M. M., Azad, A. K. M., Alyami, S. A., Hossain, M. A., Miklavcic, S. J.
“WheatSpikeNet: An Improved Wheat Spike Segmentation Model for Accurate Estimation from Field Imaging.”
Frontiers in Plant Science, 14, 1226190. <https://doi.org/10.3389/fpls.2023.1226190>

Batin, M. A., Islam, M., Hasan, M. M., Miklavcic, S. J. (2022). “Improved Detection and Analysis of Wheat Spikes Using Multi-Stage Convolutional Neural Network.” *Dhaka University Journal of Applied Science and Engineering*, 7(2), 21-30. <https://doi.org/10.3329/dujase.v7i2.65090>

Skills

Communication: Bengali - *Native*, English - *Proficient*

Programming Languages: Python, C/C++, Java

Libraries and Frameworks: PyTorch, Tensorflow, Pandas, Ultralytics, MMDetection, MMAAction2

Database Management: MySQL, PostgreSQL, Milvus VectorDB

Software & Tools: Linux, Git, Docker, Jira, Google Colab, Jupyter Notebook, VSCode, PyCharm, Microsoft Excel

Typesetting: LaTeX, Microsoft Word

Hardware: Jetson Nano, Raspberry Pi

References

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