

Sabbir Mollah

GRADUATE RESEARCH ASSISTANT | CRCV, UCF

Oviedo, Florida, USA

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Summary

A professional with expertise in **Visual Language Models** research and development. Highly versed in the intricacies of Linear Algebra and Statistics. Current research interest includes developing and improving unified VLM models. Currently working as a **GRA** at **CRCV, UCF**.

Education

University of Central Florida

Orlando, Florida, USA

PHD IN COMPUTER SCIENCE

2024 - Present

- Graduate Research Assistant at CRCV lab.
- Supervisor: Dr. Mubarak Shah

North South University

Dhaka, Bangladesh

B.S. IN COMPUTER SCIENCE AND ENGINEERING

2017 - 2021

- Graduated with **Magna Cum Laude distinction**, CGPA - **3.73/4.00**.
- Thesis : Implemented **Domain Adaptation** on RawNet to train language invariant speaker recognition model.
- Experimented **Image Colorization** by implementing GAN models with different loss functions to gain bright colorized images.

Publications

ICPR 2022

M. I. Hossain, M. Rakib, S. Mollah, F. Rahman, and N. Mohammed, "LILA-BOTI: Leveraging Isolated Letter Accumulations By Ordering Teacher Insights for Bangla Handwriting Recognition," in arXiv preprint arXiv:2205.11420, 2022.

ICLR (Tiny Paper) 2023

Sabbir Mollah, Rakib Mohammed, Mashrur Wasek, AKM Shahariar Azad Rabby, Fuad Rahman, Nabeel Mohammed, "Automated Mapping of Healthcare Concepts to a Standardized Healthcare Taxonomy," in Proceedings of IEEE Conference or Journal Name, 2023, in Proceedings of IEEE Conference or Journal Name, 2023, Available: <https://openreview.net/forum?id=87oCobKKS6x>.

Experience

Machine Learning Engineer

Dhaka, Bangladesh

BKASH LIMITED

DEC 2022 - JUL 2024

- Experimented with transformer based models to **extract information** from printed documents.
- Building **fraud preventive system** from graph database.
- Trained LSTM model to **predict missing address tokens**, e.g. missing postoffice.
- Designed comprehensive solution for English to Bangla **machine transliteration**.
- Built **loan repayment model** and completed loan risk assessment using Julia.
- Implemented backend features using **Reactive Programming Paradigm** to allow users to get human agent assisted services.

Software Engineer, Machine Learning

Dhaka, Bangladesh

APURBA TECHNOLOGIES LIMITED

SEP 2022 - DEC 2022

- Designed and developed Bangla Screen Reader, an **accessibility application** for visually impaired people.
- Developed NLP solution for mapping electronic health record against SNOMED Clinical Terminology.
- Developed an inter-encoding converter library for Bangla writings, implemented in Python, Java, C#, and Javascript.

Research Assistant

Dhaka, Bangladesh

APURBA-NSU R&D LAB

SEP 2021 - AUG 2022

- Used **Knowledge Distillation** to improve performance of CRNN model on minor classes.
- Trained MaskRCNN model to detect segments of Bangla documents.
- Worked on Bangla **speech recognition**.

Lab Instructor

Dhaka, Bangladesh

ECE DEPARTMENT, NORTH SOUTH UNIVERSITY

Spring 2022 & Summer 2022

- Taught **Database Management Systems (DBMS) using SQL** and **Object-Oriented Programming (OOP) using Java** to an average class size of 40 students.
- Prepared lab materials and provided exam questions; examined students' answer scripts.

Skills

Machine Learning	PyTorch, TensorFlow, Huggingface, scikit-learn, pandas, polars, pyspark and matplotlib.
Programming	Python, Julia, Java, C, C++, C#, Julia, Haskell
Development Frameworks	Flask, FastAPI, Spring Boot (Reactive), .Net Framework.
Database	MySQL, DynamoDB, MongoDB, Neo4j
Version Controlling	Git, GitHub, GitLab
Languages	Bangla, English and Italian.

Volunteering Experience

NSU ACM Student Chapter

CHAIR

Dhaka, Bangladesh

2017 - 2021

- Elected as the **Chapter Chair** of this community of over 300 members.
- Planned and **organized HackNSU Season 2**, an inter-university Hackathon with more than 25 participating teams.

NSU Communications Club

SUB EXECUTIVE

Dhaka, Bangladesh

2017 - 2019

- Lead the Promotions team responsible for digital advertisement.

NSU Cultural Club

GENERAL MEMBER

Dhaka, Bangladesh

2017 - 2019

- Helped the various artists in organizing on-campus cultural events.
- Decorated campus during national and local festivities.

Workshops

INSTRUCTOR

Dhaka, Bangladesh

2020, 2021, 2022

- Instructed in 4 different workshops on Python, Pytorch, and deep learning

Atomic BAFSK Science Club

FOUNDING GENERAL SECRETARY

Dhaka, Bangladesh

2014 - 2016

- Took initiative in founding Science Club in secondary school

Achievements & Awards

Robi Datathon 2.0

FINALISTS

Robi, Axiata Ltd., Dhaka

2022

- Implemented cost sensitive learning to bump performance of a machine learning model

MIST Inter-University ICT Innovation Fest Hackathon

CHAMPIONS

MIST, Dhaka

2021

- Designed and deployed a handwriting recognition model

IOT For Tomorrow

FIRST RUNNERS-UP

NSU IEEE SB, Dhaka

2019

- Presented a fire detection circuit using a microcontroller integrated with Firebase

Electrathon

2ND RUNNERS-UP

NSU IEEE SB, Dhaka

2018

- Solved various hardware and software related problems

Standardized Test Scores

GRE: 329 Quantitative Reasoning: 170, Verbal Reasoning: 159, Analytical Writing: 4.0

IELTS: 8.0 Listening: 9.0, Reading: 7.5, Writing: 7.5, Speaking: 7.0