

Education

Doctor of Philosophy (Ph.D)

Computer Science and Engineering

Research Topics: Multimodal Machine Learning, Computer Vision, NLP

University of California, Riverside

Spetember 2022 – Present

Supervisor: [Dr. M. Salman Asif](#)

Master of Science (M.Sc.)

Computer Science and Engineering

University of California, Riverside

Spetember 2022 – December 2024

Bachelor of Science (with Honors)

Computer Science and Engineering

Research Topics: Natural Language Processing

Bangladesh University of Engineering & Technology (BUET)

February 2015 - April 2019

Supervisor: [Dr. M. Sohel Rahman](#)

Research Interests and Publications

Research Interests

My interests broadly span the area of Multimodal ML, Computer Vision and NLP. Currently I am working on:

- Multimodal data fusion which is robust to missing, noisy, occluded and unaligned modalities
- Incorporating new modalities to existing models without increasing computational overhead significantly
- Methods for extracting information from noisy/unaligned/low-resolution data & test time model adaptation

Robust Multimodal Learning with Missing Modalities via Parameter-Efficient Adaptation [IEEE TPAMI](#)

Md Kaykobad Reza, Ashley Prater-Bennette, M. Salman Asif

[arXiv](#) | [Webpage](#)

Proposed a parameter efficient adaptation method for multimodal models that can enhance missing modality performance by up to 31.46% and applicable to diverse modality combinations, datasets and tasks.

MMSFormer: Multimodal Transformer for Material and Semantic Segmentation [IEEE OJSP](#)

Md Kaykobad Reza, Ashley Prater-Bennette, M. Salman Asif

[arXiv](#) | [Webpage](#) | [Code](#)

Proposed a novel fusion strategy and model for multimodal material and semantic segmentation that outperforms current state of the art models for all modality combinations.

Model, Analyze, and Comprehend User Interactions within a Social Media Platform [ICCIT 2024](#)

Md Kaykobad Reza, S M Maksudul Alam, Yiran Luo, Youzhe Liu, Md Siam

[arXiv](#)

Developed a graph-based approach to model and analyze social media user interactions, revealing key insights into community dynamics, user behavior, and content preferences.

Automatic Summarization of Scientific Articles from Biomedical Domain [IJCCI 2019](#)

Md Kaykobad Reza, Rifat Rubayatul Islam, Sadik Siddique, Md. Mostofa Akbar, M. Sohel Rahman

Proposed an algorithm for generating summaries automatically that outperforms traditional methods.

MMP: Towards Robust Multi-Modal Learning with Masked Modality Projection [Under Review](#)

Niki Nezakati, Md Kaykobad Reza, Ameya Patil, Mashhour Solh, M. Salman Asif

[arXiv](#) | [Webpage](#)

Masked Modality Projection (MMP) trains a single model to handle missing modalities by learning to project available inputs, improving robustness across various missing modality scenarios.

U2A: Unified Unimodal Adaptation for Robust and Efficient Multimodal Learning [Under Review](#)

Md Kaykobad Reza, Niki Nezakati, Ameya Patil, Mashhour Solh, M. Salman Asif

[arXiv](#)

U2A jointly fine-tunes pretrained unimodal encoders using LoRA and introduces Mask Tokens to achieve competitive performance in both complete and missing modality scenarios while reducing model complexity.

Work Experience

Applied Scientist Intern (L5)

Amazon Lab 126

Topic: Multimodal Machine Learning, Generative AI

January 2025 – June 2025

Sunnyvale, California, USA

Graduate Student Researcher

University of California, Riverside

September 2022 – Present

California, USA

- Proposed a [parameter efficient adaptation technique](#) for multimodal models that can enhance missing modality performance and applicable to diverse modality combinations, datasets and tasks.
- Designed a novel fusion strategy and model named [MMSFormer](#) for multimodal material and semantic segmentation that outperforms current state of the art models in all modality combinations.
- Proposed [Masked Modality Projection \(MMP\)](#) to train a single model to handle missing modalities by learning to project available inputs, improving robustness across various missing modality scenarios.
- Designed [U2A, a method to jointly fine-tune pretrained unimodal encoders](#) using LoRA and introduces Mask Tokens to achieve competitive performance in both complete and missing modality scenarios.

Senior Engineer, Software Research & Engineering

bKash Limited (Joint venture of Money in Motion, Ant Group & SoftBank)

July 2019 – August 2022

Dhaka, Bangladesh

- Developed a solution for receiving remittance to bKash digital wallet directly from popular platforms like **Payoneer**, **Wise** and **Remitly** resulting in **17%** increase in total number of active users.
- Worked with **bKash Customer App** team to link bKash digital wallet to **36** government and private banks for real time and secure money transfers.
- Worked with **bKash Merchant App** team to build a real-time dashboard for small to large businesses.
- Collaborated with **bKash Payment Gateway** team for implementing fast and secure payment solution resulting in a **23.2%** increase in user engagement and **12.6%** increase in total yearly revenue.
- Our team also implemented send money, mobile recharge, cash out and deposit pension scheme (DPS).

Software Engineer, Mobile Application

Samsung Research & Development Institute, Bangladesh

May 2019 – July 2019

Dhaka, Bangladesh

- I worked as an iOS application developer and worked in Mobile Application Group - 1.
- My primary responsibilities were to develop mobile applications, ensure code quality and fix critical bugs.

Machine Learning Projects

Language generation using RNNLM (NLP Project)

Deep Learning, Keras | [Github](#)

Used Quora question pair dataset to generate sentences for gap filling & template-based sentence generation.

Automated Lawn Mower (Hardware Project)

Deep Learning, Computer Vision | [Youtube](#)

Automated device using computer vision, camera, sonar sensors to detect and cut grass, avoiding obstacles.

Weather Station (Microcontroller Project)

Machine Learning, Microcontroller | [Youtube](#)

A compact device that monitors current weather, stores data, conducts analysis and predicts future weather.

Software Projects

Dyne: Meet Your Friends Over Food (Social Media App)

Flutter, Firebase, NodeJs, Geolocation | [Details](#)

Social app for instant food meetups, exploring restaurants, chatting, coupons, fostering connections & savings.

Dorao: Your Running Companion (Fitness Tracker App)

Flutter, Firebase, Django, Geolocation | [Details](#)

Track walks/runs, log time & distance, real-time stats, create group, complete daily challenges & earn rewards.

Procurement Institute (Tender Management Solution)

Flutter, Firebase, In-App Purchase | [Details](#)

Find out all the gazetted tenders, see details, search or filter, save for later, subscribe for alerts and reminders.

Payvor: Pay & Get Paid for a Favor (Freelance Platform)

Flutter, Firebase, C# .NET, Stripe | [Details](#)

Post job/apply for job, select preferred applicant, assign the job, get the work done, make payment or get paid.

Tourist Guide App Flutter, Firebase, Geolocation, In-App Purchase | [Details](#)
Find out hotels, tourist spots, restaurants, transportation, events, adventures and everything at your fingertips.

Pessa: Real-Time Financial Transaction (FinTech App) Flutter, Firebase, C# .NET | [Details](#)
All-in-one mobile wallet for seamless money management. Add money, send funds instantly, cash out, & more.

Cherished Prayers (Social Media for the Pious) Flutter, Firebase, Django, Real-Time Chat | [Details](#)
Record, share, seek solutions, connect with others via chat, groups, and feedback for an enriched experience.

Skills

Soft Skills	Communication, Collaboration, Problem Solving
Programming Languages	Python, Dart, Java, C/C++
Library/Frameworks	PyTorch, TensorFlow, Huggingface, Scikit-learn, OpenCV, NumPy, Pandas, Matplotlib, Flutter, Django
Database	MySQL, PostgreSQL, HBase, Firebase Firestore, Firebase Realtime DB
Software/Technologies	Anaconda, PyCharm, Android Studio, VSCode, Firebase, RestAPI, GraphQL, FastAPI, Git

Services

Reviewer	IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)	2025
Reviewer	IEEE Transactions on Computational Imaging	2025
Reviewer	IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)	2024

Leadership

Vice President	Greater Rangpur Students’ Welfare Association, BUET	Aug 2018 – May 2019
Class Representative	Department of Computer Science & Engineering, BUET	April 2016 - April 2019

Awards

Dean’s Distinguished Fellowship	University of California, Riverside	Fall’22 - Spring’23
Department Dean’s List Award	Bangladesh University of Eng. & Tech. (BUET)	2015 - 2019
University Merit Scholarship	Bangladesh University of Eng. & Tech. (BUET)	2015 - 2019
MetLife Pathways Scholarship	MetLife Foundation	2015 - 2018
Education Board Scholarship	Bangladesh Education Board	2012 - 2018