Md. Mahfuzur Rahman

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mahfuzur-mahim-rahman | Mahim-Sama

CAREER OBJECTIVE

I want to learn more about logic, cybersecurity, and AI, especially AI security. I want to be a good programmer and computer scientist who advances AI technology while growing personally and professionally.

RESEARCH INTERESTS

Natural Language Processing and Large Language Models, Computer Vision (remote sensing), Generative AI, Retrieval-Augmented Generation, Gene-Disease Association, Graph Neural Networks, Knowledge Graph, System on a Chip (SoC), Cyber Security, Quantum Computing.

EDUCATION

Ahsanullah University of Sceience and Technology, B.Sc. in Computer Science and Engineering   December 2023
- CGPA: 2.849/4.0

BCIC college , Higher Secondary Certificate   July 2018
- GPA: 4.25/5.0

Monipur High School, Secondary School Certificate   May 2016
- CGPA: 5.0/5.0

EXPERIENCE

Junior Software Engineer (ML team), Silicon Orchard LTD.   March 2024 – Present
- Contributed to a corporate project by implementing a **RAG** system and overseeing API deployment utilising **FastAPI**. Implemented the system on the company's proprietary server.
- Currently engaged in a research project utilising the **YOLO** object detection model.
- Engaged in an ongoing initiative that focuses on improving current operations. In this work, I used the **fuzzy c-means** clustering method, evaluated the clustering, and used the existing **autoencoder** model for text processing.

PUBLICATIONS

Md. Mahfuzur Rahman, Sunzida Siddique, Marufa Kamal, Rakib Hossain Rifat, and Kishor Datta Gupta. "**UAV (Unmanned Aerial Vehicles): Diverse Applications of UAV Datasets in Segmentation, Classification, Detection, and Tracking.**" Submitted to *MDPI Algorithms Journal*.
Article available at: 10.3390/a17120594.

Fatema Tuj Johora Faria, Mukaffi Bin Moin, Md. Mahfuzur Rahman, Md. Morshed Alam Shanto, Asif Iftekher Fahim, and Md. Moinul Hoque. "**Uddessho: An Extensive Benchmark Dataset for Multimodal Author Intent Classification in Low-Resource Bangla Language.**" Presented at *ICITA 2024*.
Preprint available at: 10.48550/arXiv.2409.09504.

Mohd Ariful Haque, Sunzida Siddique, Md. Mahfuzur Rahman, Ahmed Rafi Hasan, Laxmi Rani Das, Marufa Kamal, Tasnim Masura, and Kishor Datta Gupta. "**SoK: Exploring Hallucinations and Security Risks in AI-Assisted Software Development With Insights for LLM Deployment**"
Preprint available at: arxiv.org/abs/2502.18468.

Submitted Manuscripts

Fatema Tuj Johora Faria, Mukaffi Bin Moin, Busra Kamal Rafa, Swarnajit Saha, Md. Mahfuzur Rahman, Khan Md. Hasib, and M. F. Mridha. "**BanglaCalamityMMD: A Comprehensive Benchmark Dataset for Multimodal Disaster Identification in the Low-Resource Bangla Language.**" under review in the *International Journal of Disaster Risk Reduction*.

Ongoing Research

Knowledge Graph Embedding and Graph Convolutional Network based approach to Gene-Disease Association Prediction (On going)

Physical Fuzzy Rule Based Unsupervised News Article Clustering (On going)

Technologies

Languages: Python, C++, C, Java

Scripting: LaTeX

Framework: Python-Kivy

IDE: PyCharm, Jupyter Notebook, CodeBlocks, Visual Studio

Editors: Visual Studio Code, Notepad++

Database: MS-SQL

Deep Learning Framework: Pytorch, TensorFlow, keras, Langchain

AI/ML Integration Techniques: Prompt Engineering, Finetuning, Retrieval Augmented System (RAG)

Others: Postman, FastAPI, Streamlite

Extra-Curricular Activities

- **Organizer**, AUST CSE Carnival 1.0, Ahsanullah University of Science and Technology (Jan 2023)
  - Organized and volunteered in the intra-university programming contest.
  - Organized and monitored the Robo-Soccer tournament.
  - Volunteered in the Software Exhibition.
- **Organizer**, AUST CSE ODYSSEY Spring 2022
  - Monitored code of conduct inside the venue.
  - Management of the whole ceremony.
- **Participant**, CodeFiesta Sponsored by CEFALO (2022)
  - Took part in this inter-university programming contest to assess myself.
- **Organizer**, Naimul Memorial Cricket League Spring-2022
  - Actively helped plan the sports event and monitored the overall rules and guidelines for sports (Cricket) behaviour.
- **Prize and Certificate Winner**, from "Bishwo Shahitto Kendro" (2017)
  - For participating in their "Class XI (Dhaka Metropolitan) book reading" program.

References

References available upon request.