Zaber Ibn Abdul Hakim

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I have gained extensive experience in deep learning over the past 4 years. Initially, I actively participated in multiple competitions on Kaggle, DrivenData, and the IEEE Signal Processing Society. Ranked as a **Kaggle Competition Master**, I attained the best overall Kaggle rank of 385 among 200,000+ users. Additionally, I have engaged in various research activities and authored multiple research publications. Currently, I am working as a machine learning engineer.

EDUCATION

- **Bachelor of Science in Computer Science and Engineering**   March 2018 — May 2023
  Bangladesh University of Engineering and Technology
  CGPA : 3.83 (out of 4.00) | *Enlisted for Deans List Award*

EXPERIENCE

■ **Machine Learning Engineer**   Jun 2023 — Current
  IQVIA

  - Developing a general and multi-purpose fine-tuned Large Language Model
  - Developing intelligent agents to answer clients' natural language queries
  - Developing FastAPI & FlaskAPI for the ML algorithms to communicate with the backend
  - Onboarding duties of recently joined employees

■ **Research Intern**   Jan 2022 — Dec 2023
  Xu Lab
  Carnegie Mellon University

  - Improved the understanding of different sentence components in multiple video-language joint learning tasks.
  - Devised a solution to detect anomalous events in automated tools during experiments in a laboratory using recorded videos.
  - completed the writing of two scientific manuscripts. One accepted and another under review.
  - Supervised one undergraduate student in a research work

RESEARCH PUBLICATIONS

■ **"Leveraging Generative Language Models for Weakly Supervised Sentence Component Analysis in Video-Language Joint Learning",**
  ZIA Hakim, *NH Sarker*, *RP Singh, B Paul, A Dabouei, M Xu*
  Under Review in **2024 IEEE/CVF Conference on Computer Vision and Pattern Recognition 2024 (CVPR 2024)**
  Paper Link

■ **"ArtiFact: A Large-Scale Dataset with Artificial and Factual Images for Generalizable and Robust Synthetic Image Detection",**
  MA Rahman, *B Paul*, *NH Sarker*, *ZIA Hakim*, *SA Fattah*
  Published in **2023 IEEE International Conference on Image Processing (ICIP 2023)**
  Paper Link   **Dataset**

■ **"Detecting Anomalies from Liquid Transfer Videos in Automated Laboratory Setting",**
  NH Sarker, ZIA Hakim, A Dabouei, MR Uddin, Z Freyberg, A MacWilliams, J Kangas, M Xu
  Published in **Frontiers in Molecular Biosciences (under AI in Biological and Biomedical Imaging)**
  Paper Link

■ **"Attention-Driven Multi-Modal Fusion: Enhancing Sign Language Recognition and Translation",**
  ZIA Hakim, RM Swargo, MA Adnan
  Arxiv Preprint
  Paper Link

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MACHINE LEARNING COMPETITIONS

■ **SIIM-FISABIO-RSNA COVID-19 Detection** — Aug 2021
Identify and localize COVID-19 abnormalities on chest radiograph images
4th *Place out of 1305 teams.* (**Gold Medal Winner at Kaggle**) | *Best Student Team Award Winner*

■ **HP Presents Kaggle Days World Championship 2022** — Sept 2022
Winner of Shanghai Regional
Selected as one of the top 36 data science teams globally to participate in the final event at Barcelona, Spain

■ **Deep Chimpact** — Nov 2021
Depth Estimation of animals from Images for Wildlife Conservation
Winner | 1st *Place out of 313 teams*

■ **IEEE Signal Processing Cup** — May 2022
Differentiation between original human speech and synthetic speech.
Winner | Presented our solution at ICASSP 2022, Singapore

■ **IEEE Video & Image Processing Cup** — Sept 2022
Synthetic Image Detection.
First Runner-up

■ **NFL 1st and Future - Impact Detection** — Jan 2021
Detection of helmet impacts between players in videos of NFL games.
25th *Place out of 460 teams.* (**Silver Medal Winner at Kaggle**)

SOFTWARE PROJECTS

■ **How Are You**
A Mental Health Screening Site
Used Flask, ReactJS and PostgreSQL

■ **BUET Alumni Portal**
An Portal For Alumni for my university
Used Django, HTML, CSS, JavaScript and PostgreSQL

EXTRA CURRICULAR ACTIVITIES

■ **Technical Committee Chair** — May 2022 - May 2023
IEEE Computer Society
"Bangladesh Univerisity Of Engineering & Technology (BUET)" Student Branch Chapter

■ **Organizer** — Jul 2022
DL Sprint - BUET CSE Fest 2022
First Inter-University Deep Learning Competition hosted by BUET

This competition won **Kaggle Community Competition Creator Prize: July Month** for its problem statement, community involvement, and impact

■ **Speaker : Introduction to Kaggle and Deep Learning** — Jun 2022
An introductory workshop organized by "IEEE Computer Society BUET Student Branch"
150+ students from different universities attended this session