Md Saiful Islam

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Website: https://saiful1105020.github.io
Google Scholar, Github

Overview

My research interest lies in developing data-efficient techniques for modeling medical video data and exploring the potential of multimodal foundation models to capture the subtleties of human communication and movement. My PhD thesis focuses on Parkinson's disease as a critical health use case.

Research Expertise

- Machine Learning for Healthcare
- Natural Language Processing
- Computer Vision
- Wearable Devices

Awards and Honors

- **Google Ph.D. Fellowship** for Health Research (2023).
- *Travel grant* to attend the Conference on Health, Inference and Learning (CHIL 2023)
- *University Merit* and *Dean's List Scholarship* for exceptional undergraduate result (2012-2017).

Educational Background

Ph.D. (Ongoing) in Computer Science 2021- Current
Artificial Intelligence and Human Computer Interaction (AI-HCI)
University of Rochester

M.Sc. in Computer Science 2021-2022
University of Rochester (CGPA: 4.00/4.00)

M.Sc. in Computer Science and Engineering 2017-2020
Bangladesh University of Engineering and Technology (CGPA: 4.00/4.00)

B.Sc. in Computer Science and Engineering 2012-2017
Bangladesh University of Engineering and Technology (CGPA: 3.96/4.00)

Professional Experience

Graduate Research Assistant Feb 2021 - Current
Primary contributor to a web-based screening framework for Parkinson's disease accessible via web browsers.
Demo link: `https://parktest.net/demo`
University of Rochester, New York, United States.

PhD Research Intern Summer 2024
Developed advanced biomarker extraction algorithms for personalized health monitoring using wearables.
Samsung Research America (Digital Health Lab), Mountain View, California, United States.

Faculty Member at Department of CSE
May 2017 - Nov 2020 (**Lecturer**), Nov 2020 - Jan 2021 (**Assistant Professor**)
Bangladesh University of Engineering and Technology, Dhaka, Bangladesh.

Instructor at AI Training Nov 2018 - Mar 2019
Hiperdyne Corporation, Japan
Trained 25+ fresh graduates entering AI industry. [Course Outline]

Selected Publications

1. **Accessible, At-Home Detection of Parkinson's Disease via Multi-task Video Analysis**
   Md Saiful Islam, Tariq Adnan, ..., E Dorsey, Ehsan Hoque
   Proceedings of the AAAI conference on artificial intelligence, 2025 (under phase 2 review) [Pre-print]
2. **Using AI to measure Parkinson's disease severity at home**
   Md Saiful Islam, Wasifur Rahman, ..., Earl Ray Dorsey, Ehsan Hoque
   npj Digital Medicine, 2023 [Article]
3. **Auto-Gait: Automatic Ataxia Risk Assessment with Computer Vision from Gait Task Videos**
   Wasifur Rahman, Masum Hasan, Md Saiful Islam, ... , Ehsan Hoque
   Proceedings of the ACM on *Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, 2023 [Article]
4. **BayesBeat: Reliable Atrial Fibrillation Detection from Noisy Photoplethysmography Data**
   Sarkar Snigdha Sarathi Das, Subangkar Karmaker Shanto, Masum Rahman, Md Saiful Islam, Atif Hasan Rahman, Mohammad M Masud, and Mohammed Eunus Ali
   Proceedings of the ACM on *Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, 2022 [Article]
5. **Detecting Parkinson Disease From a Web-Based Speech Task: Observational Study**
   Wasifur Rahman, Sangwu Lee, Md Saiful Islam, ... , Max A Little, Ray Dorsey, Ehsan Hoque
   Journal of Medical Internet Research, 2021 [Article]
6. **Hitting your MARQ: Multimodal ARgument Quality Assessment in Long Debate Video**
   Md Kamrul Hasan, James Spann, Masum Hasan, Md Saiful Islam, Kurtis Haut, Rada Mihalcea and Ehsan Hoque
   Conference on *Empirical Methods in Natural Language Processing (EMNLP)*, 2021 [Article]
7. **XL-Sum: Large-Scale Multilingual Abstractive Summarization for 44 Languages**
   Tahmid Hasan, Abhik Bhattacharjee, Md Saiful Islam, Kazi Mubasshir, Yuan-Fang Li, Yong-Bin Kang, M. Sohel Rahman and Rifat Shahriyar
   Findings of the *Association for Computational Linguistics (ACL)*, 2021 [Article]

Full list of publications: https://scholar.google.com/citations?user=LmRLizgAAAAJ&hl=en

Mentorship

I was fortunate to mentor many excellent undergraduate students including:

- Md Rafid Ul Islam*, Bangladesh University of Engineering and Technology
- Sutapa Dey Tithi¶, Bangladesh University of Engineering and Technology
- Sangwu Lee*, University of Rochester
- Caleb Wohn*, University of Rochester
- Serena Uong*,¶, University of Rochester
- Abdelrahman Abdelkader*, University of Rochester

* Published a paper together
¶ Underrepresented minority in Computer Science