Adiba Mahbub Proma

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Research Interest

Human-Computer Interaction, Machine Learning, Network Analysis, Computational Social Science, Social Networks, Social Media, Online Interactions, Behavior Modelling, Affective Computing, Climate Change

Education

University of Rochester **Jan 2021-Present**

Doctor of Philosophy in Computer Science (Human-Computer Interaction, ***Advisor:*** *Dr.Ehsan Hoque)* *Rochester, NY, USA*

BRAC University **Jan 2016-Dec 2019**

Bachelor of Science in Computer Science and Engineering *Dhaka, Bangladesh*

- **CGPA: 3.97/4**, *Highest Distinction (Awarded to students graduating with CGPA greater than 3.8)*
- **Thesis topics:** Deep Learning, Ensemble Learning, Classification, Clustering

Experience

Research Assistant, University of Rochester **2021-Present**

Rochester Human-Computer Interaction Lab (ROCHCI Lab) *Rochester, NY*

- **Understanding Belief Rigidity in Temporal Social Networks**
  - Built a pseudo-social media platform for virtual experiments using Empirica (JavaScript framework) and hosted on Meteor Galaxy
  - Designed and conducted case-control user studies to analyze the impact of peer influences on belief rigidity on social platforms, recruiting participants via Amazon Mechanical Turk and Prolific [Publication]
- **Natural Disaster Benchmark Dataset Curation Platform for Machine Learning Tasks**
  - Led end-to-end development of dataset curation platform, utilizing low-fidelity prototyping (Figma), and expert interviews to inform user-centric design [Publication]
  - Developed the curation platform using JavaScript and React, hosted on Namecheap and Firebase [Website]
- **Redesigning Interface to Facilitate Eco-friendly Consumption in Online Platforms**
  - Designed and executed a quasi-randomized case-control study aimed at investigating the impact of interface cues on promoting eco-friendly products, recruiting 98 participants from Amazon Mechanical Turk
  - Our custom-built platform increased eco-friendly consumption significantly ($p < 0.005$) and achieved System Usability Scale (SUS) score of 79.18 [Publication]

Research Assistant, CMED Health(Breast Cancer Research Division) **2018-2021**

Startup focused on developing digital health technology for Bangladesh *Dhaka,Bangladesh*

- Developed a questionnaire-based breast cancer risk assessment and early detection algorithm through comprehensive literature review and expert interviews with medical professionals
- Conducted feasibility analysis to develop web-platform functionalities for breast cancer awareness website [Website]
- Achieved government grant funding of BDT 10,000,000 (10000 USD) from Bangladesh ICT division Ministry

Data Intern, Tech for Development Unit, BRAC SDP, BRAC Bangladesh **Feb 2020-Jul 2020**

BRAC SDP is an initiative by BRAC NGO to boosts informal sector job placements *Dhaka,Bangladesh*

- Assessed the impact of the COVID-19 pandemic on individuals' income using statistical data analysis and data visualization (Tableau) to inform BRAC action plans

Technical Skills

- **Programming Languages:** Python, R, Java, ReactJS, Javascript, HTML, CSS
- **Frameworks:** TensorFlow, Keras, PyTorch, Scikit-learn, Pandas, Numpy, Matplotlib, Seaborn, OpenCV, SenticNet
- **Software:** Tableau, Empirica, MongoDB, Figma, Canva

Press

- **A. Proma**, R. Wachter, E. Hoque. **The Untapped Potential of Computing and Cognition in Tackling Climate Change**, NAE Perspectives, 2023

Publications

- **A. Proma**, **Understanding the Rigidity of Beliefs in Temporal Social Networks**. 11th International Conference on Affective Computing and Intelligent Interaction Workshops and Demos(ACIIW), 2023 [Publication]
- M. S. Islam, **A. Proma**, C. Wohn, K. Berger, S. Uong, V. Kumar, K. S. Korfmacher, and E. Hoque, **SEER: Sustainable E-commerce with Environmental-impact Rating**, Cleaner Environmental Systems, 2023 [Publication]
- **A. Proma**, M. S. Islam, S. Ciko, R. A. Baten, E. Hoque, **NADBenchmarks – a compilation of Benchmark Datasets for Machine Learning Tasks related to Natural Disasters**. The Role of AI in Responding to Climate Change, AAAI Fall Symposium Series, 2022 [Publication]
- M. S. Islam, **A. Proma**, Y. Zhou, S. N. Akter, C. Wohn, E. Hoque, **KnowUREnvironment: An Automated Knowledge Graph for Climate Change and Environmental Issues**, The Role of AI in Responding to Climate Change, AAAI Fall Symposium Series, 2022 [Publication]
- S. Kelty, R. A. Baten, **A. M. Proma**, E. Hoque, J. Bollen, and G. Ghoshal, **Don't Follow the Leader: Independent Thinkers Create Scientific Innovation**, arXiv., 2023 [Preprint]

Teaching Experience

Teaching Assistant, University of Rochester **Sep 2021-Dec 2022**

- **Courses conducted:** Human Computer Interaction (CSC-212/412), Undergraduate Problem Seminar (CSC200H), Database Systems (CSC261)

Contractual Lecturer, BRAC University **Jan 2020-Dec 2020**

- **Courses conducted:** Introduction to computing(CSE101), Data Structures(CSE220), Algorithms(CSE221), Microprocessors(CSE341), Compilers(CSE420)

Recognition

- **Selected for CRA-WP Grad Cohort**, 2023
- **Selected for CRA-WP Grad Cohort**, 2022
- **Funding for CanAware project from ICT division of Ministry of Posts, Telecommunications and Information Technology**, Bangladesh, 2018