MD NAIMUL HOQUE

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RESEARCH SUMMARY

My research interests span to visual analytics, human-computer interaction, and machine learning. More precisely, I seek to understand how interactive visual interfaces may enhance user agency and trust in AI-mediated systems. This includes designing systems to foster creativity and learning, designing novel visualization for interpreting ML models, and multi-modal interactions (auditory and visual) for sensemaking.

EDUCATION

University of Maryland, College Park, MD, USA *Aug 2020 - Present*
Ph.D. in Information Studies CGPA: 3.95/4
Human-Computer Interaction Lab (HCIL), Advisor: Niklas Elmqvist

Stony Brook University, NY, USA *Aug 2018 - May 2020*
M.S. in Computer Science CGPA: 3.9/4.00
Advisor: Klaus Mueller

University of Dhaka, Dhaka, Bangladesh *2011-2015*
B.Sc. in Computer Science and Engineering CGPA: 3.6/4.00

PROFESSIONAL EXPERIENCE

Research Intern Virtual
Bosch Research, Advisor: Liang Gou *May 2021 - Aug 2021*

Designed an interactive interface to interpret visual concepts learned from a self-supervised model. The interface allows weak supervision for fine-tuning the concepts. We submitted a patent for the project and currently working on writing a paper.

Graduate Teaching Assistant MD, USA
University of Maryland, College Park *Aug 2020 - Present*

Courses: Introduction to Data Visualization; Introduction to Data Science.

Graduate Research Assistant NY, USA
Stony brook University, Advisor: Klaus Mueller *May 2019- Aug 2020*

Projects: Visual causal model for transparent decision making, Collaborative sense-making through causal reasoning; Interactive tool for balancing screentime for characters in a live telecast.

PUBLICATION

Peer Reviewed Conference and Journal Papers

- Md Naimul Hoque, Bhavya Ghai, Niklas Elmqvist. 2022. DramatVis Personae: Visual Text Analytics for Identifying Social Biases in Creative Writing. In *Designing Interactive Systems Conference (DIS'22)*, to appear. https://doi.org/10.1145/3532106.3533526.
- Md Naimul Hoque, Klaus Mueller. 2021. Outcome-Explorer: A Causality Guided Interactive Visual Interface for Interpretable Algorithmic Decision Making. *IEEE Transaction on Visualization and Computer Graphics*. https://doi.org/10.1109/TVCG.2021.3102051. (pdf) (video)

- Md Naimul Hoque, Nazmus Saquib, Syed Masum Billah, and Klaus Mueller. 2020. Toward Interactively Balancing the Screen Time of Actors Based on Observable Phenotypic Traits in Live Telecast. In *Proceedings of the ACM on Human-Computer Interaction (CSCW)*. https://doi.org/10.1145/3415225. (pdf) (video)
- Md Naimul Hoque, Choudhury Farhan Ahmed, Nicolas Lachiche, Carson K. Leung, Hao Zhang. 2016. Reframing in Clustering. *IEEE 28th International Conference on Tools with Artificial Intelligence (ICTAI)*. (pdf)

Workshops, Posters, and Extended Abstracts

- Bhavya Ghai, Md Naimul Hoque, Klaus Mueller. 2021. WordBias: An Interactive Visual Tool for Exploring Intersectional Social Biases Encoded in Word Embeddings. *Extended Abstracts of the CHI Conference on Human Factors in Computing Systems*. (pdf) (github) (video)
- Md Naimul Hoque, Niklas Elmqvist. 2021. Towards Using Visual Analytics to Promote Diversity, Equity,and Inclusion. *Artificially Intelligent Technology for the Margins: A Multidisciplinary Design Agenda. CHI Workshp.*
- Md Naimul Hoque, Darius Coelho, Klaus Mueller. 2019. Examining the Visualization Practices of Data Scientists on Kaggle. *InfoVis Poster.*
- Md Mehedi Hassan, Ashik Adnan, Asif M. Saleheen, Md Naimul Hoque. 2018. Understanding the Patterns of Crime Reports in a Popular Bangladeshi Newspaper. *Companion of ACM CSCW*. (pdf)
- Md Naimul Hoque, Rawshan E. Fatima, Manash Mandal, Nazmus Saquib. 2017. Evaluating gender portrayal in Bangladeshi TV. *Machine Learning for the Developing World, NIPS 2017 Workshop*. (pdf)

AWARDS AND ACHIEVEMENTS

- Dr. Dana Rotman Doctoral Student Travel Awards. iSchool, University of Maryland, College Park. 2021
- Doctoral Student Research Award (DRSA). iSchool, University of Maryland, College Park. 2021. ($1000)
- Chairman's Fellowship. Stony Brook University. 2018. ($3000)

TECHNICAL SKILLS

- Programming Languages: Python, Javascript, R, C, C++, Java, PHP
- Markup Languages : CSS, HTML
- Database: MySql, Oracle, MongoDB
- ML Framework: PyTorch, Tensorflow
- Web Framework : Flask, React
- Visualization Tool: D3.js
- VCS : Git
- NLP Tools: spaCy, NLTK, Stanford NLP
- Image Analysis Tools: OpenCV, Dlib