MD NAIMUL HOQUE

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RESEARCH SUMMARY

My primary research interest is designing systems for supporting Human-AI collaboration. I am interested in supporting creativity (e.g., storytelling, live streaming) and enhancing interpretability and transparency of ML models by designing highly interactive and visual systems.

EDUCATION

University of Maryland, College Park, MD, USA *Aug 2020 - Present*
Ph.D. in Information Studies CGPA: 3.97/4
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. This work will appear at IEEE Visualization Conference (VIS), 2022.

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, Wenbin He, Shekar Arvind Kumar, Liang Gou, Liu Ren. Visual Concept Programming: A Visual Analytics Approach to Injecting Human Intelligence at Scale, to appear at IEEE Visualization conference, VIS 2022
- Md Naimul Hoque, Bhavya Ghai, Niklas Elmqvist. DramatVis Personae: Visual Text Analytics for Identifying Social Biases in Creative Writing. In *Designing Interactive Systems Conference (DIS)*, 2022. https://doi.org/10.1145/3532106.3533526. (pdf) (video) (github) (try it out!)
- Md Naimul Hoque, Klaus Mueller. Outcome-Explorer: A Causality Guided Interactive Visual Interface for Interpretable Algorithmic Decision Making. *IEEE Transaction on Visualization and Computer Graphics*, 2021. https://doi.org/10.1109/TVCG.2021.3102051. (pdf) (video)

- Md Naimul Hoque, Nazmus Saquib, Syed Masum Billah, and Klaus Mueller. 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)*, 2020. https://doi.org/10.1145/3415225. (pdf) (video)
- Md Naimul Hoque, Choudhury Farhan Ahmed, Nicolas Lachiche, Carson K. Leung, Hao Zhang. Reframing in Clustering. *IEEE 28th International Conference on Tools with Artificial Intelligence (ICTAI)*, 2016. (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