Uzma Haque Syeda, PhD

Data Visualization and HCI researcher
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EDUCATION

- **PhD in Computer Science**, Northeastern University, 2025
- **M.S. in Computer** Science, Northeastern University, 2022
- **B.Sc. in Electrical and Electronic Engineering**, University of Dhaka, 2017

RESEARCH INTERESTS

Data visualization, human-computer interaction (HCI), design study methodologies, user-centered design, visualization evaluations, replication studies, visualization pedagogy, and visualization for social good.

RESEARCH EXPERIENCE

- **Graduate Research Assistant** in the VIS Lab at Khoury College of Computer Sciences, Northeastern University.
  Advisor: Professor Michelle A. Borkin

- Undergraduate Research on a project titled "**Visual behavior analysis between neuro-typical children and children with Autism Spectrum Disorder.**"
  Advisor: Dr. Md Atiqur Rahman Ahad

🏆 AWARDS AND FELLOWSHIPS 🏆

- **2025 PhD Teaching Award** from Khoury College of Computer Sciences, Northeastern University. This award was given in recognition of exemplary teaching accomplishments and for developing a classroom pedagogy that inspires peers and colleagues.

- **Dissertation Completion Fellowship (Spring 2025).** A semester-long fellowship awarded to outstanding PhD candidates in their final semester of PhD at Northeastern University.

- **Academic Technology Scholar fellowship (Summer 2022).** This semester-long fellowship is a practicum course and training to help support faculty with integrating and using technology to support teaching and learning.

- **Best Paper Award at CHI 2020 Conference on Human Factors in Computing Systems** for the paper "Design Study "Lite" Methodology: Expediting Design Studies and Enabling the Synergy of Visualization Pedagogy and Social Good."
  Syeda, U.H., Murali, P., Roe, L., Berkey, B. and Borkin, M.A.
  DOI: 10.1145/3313831.3376829

- **1-year Graduate Fellowship Award from the Khoury College of Computer Sciences, Northeastern University (2018-2019).** This fellowship is awarded to top admitted PhD candidates in recognition of their outstanding academic accomplishments.

PAPER PRESENTATIONS

- **EuroVis 2024** Conference on Visualization, “Vis Repligogy: Towards a Culture of Facilitating Replication Studies in Visualization Pedagogy and Research.”

- **EuroVis 2023** Conference on Visualization, “Process and Pitfalls of Online Teaching and Learning with Design Study “Lite” Methodology: A Retrospective Analysis.”
  Video Presentation Link: https://www.youtube.com/watch?v=FheRUMju5xA

- **CHI 2020** Conference on Human Factors in Computing Systems, “Design Study "Lite" Methodology: Expediting Design Studies and Enabling the Synergy of Visualization Pedagogy and Social Good”
  Video Presentation Link: https://www.youtube.com/watch?v=ZbfpJikhvRc&t=11s

CONTRIBUTED TALKS

- **IEEE VIS 2021,** Workshop: Visualization for Social Good, **“Facilitating Visualization for Social Good in Academic Courses”**
  https://vis4good.github.io/

- **IEEE VIS 2019**, Tutorial: Visualization for Social Good, **“Service-Learning in Visualization”**
  https://vis4good.github.io/tutorial19.html

TEACHING EXPERIENCE

Instructor

- **Instructor of record**, **Data Science 4200: Information Presentation and Visualization, Khoury College of Computer Sciences, Northeastern University (Spring 2023)**
  - Developed and delivered curriculum focusing on teaching and guiding students in user-centric design thinking and processes, design principles and visualization techniques and evaluation.
  - Mentored and orchestrated **11 design** projects with **36 students** who collaborated with various stakeholders, including the city council to address their data-related needs through data visualization solutions by utilizing a user-centric design process that was taught in class and implemented through the projects.

- **Full time teacher** (substitute English literature and English language teacher) in **Maple Leaf International School, Dhaka, Bangladesh** (**01/2012 to 10/2012)**

Teaching Assistant

- **Teaching Assistant in Data Visualization Courses, Khoury College of Computer Sciences, Northeastern University**
  (**Responsibilities:** Delivering a total of 3 hours of lecture, orchestrating in-class activities, final project management for student teams, guiding students in the design process and design projects, teaching and delivering in-class programming tutorials of D3.js, Web Development (HTML, CSS, and JS), Tableau, Matplotlib, and Altair, creating and grading assignments, and holding office hours.)

  - **Data Science 4200: Information Presentation & Visualization (Summer 2024)**
  - **Data Science 4200: Information Presentation & Visualization (Summer 2023)**
  - **Data Science 4200: Information Presentation & Visualization (Fall 2022)**
  - **Data Science 4200: Information Presentation & Visualization (Spring 2022)**

- **Data Science 4200: Information Presentation & Visualization (Fall 2021)**
- **Data Science 4200: Information Presentation & Visualization (Spring 2021)**
- **Data Science 4200: Information Presentation & Visualization (Fall 2019)**

- **Teaching Assistant in Human Computer Interaction Courses, Khoury College of Computer Sciences, Northeastern University**
  (**Responsibilities:** Assisted in teaching **UX design** principles (need finding and interviews, analyzing interviews, sketching and rapid prototyping, evaluating the prototypes, etc.), teaching students Figma through in-class tutorials and practice, grading assignments and projects, and holding office hours.)
  - **CS 5340 Computer/Human Interaction (Fall 2024)**
  - **CS 5340: Computer/Human Interaction (Spring 2024)**

PROFESSIONAL ACTIVITIES

- **Academic Technology Scholar, Northeastern University (Summer 2022)**
  Assisted faculty in integrating emerging technologies into their teaching methodologies, focused on the effective use of learning management systems and interactive teaching tools.
  View Badge: https://www.credly.com/badges/3d8f026b-c8b5-4ce6-8100-a3622af2c92c/public_url

Program Committees

- **Co-organizer**, Visualization for Social Good workshop, IEEE VIS 2023 (https://vis4good.github.io/)
- **Program Committee**, Visualization for Social Good workshop, IEEE VIS 2022 (https://vis4good.github.io/workshop2022)
- **Program Committee**, Visualization for Social Good workshop, IEEE VIS 2021 (https://vis4good.github.io/workshop2021)
- **Co-organizer**, Visualization for Social Good tutorial, IEEE VIS 2019 (https://vis4good.github.io/tutorial2019)

Journal and Conference Paper Reviewing

- ACM CHI (Computer Human Interaction) *(2026)*
- IEEE VIS (Visualization and Visual Analytics) *(2023, 2021)*
- IEEE VIS, Vis4Good Workshop *(2023)*
- IEEE VIS, Vis4Good Workshop *(2022)*
- Creativity & Cognition *(2021)*

OUTREACH AND VOLUNTEERING EXPERIENCE

- **Service-Learning Teaching (Spring 2023)**
  Service-Learning is an experiential learning approach that connects coursework to meet community needs. I taught DS4200 (Data Science 4200: Information Presentation and Visualization) in Spring 2023, where I integrated Service-Learning and partnered with different non-profit and community organizations to identify their real-world data-related challenges that students addressed through the course's final design study projects. As part of the process my students and I worked with the partners throughout the design process from understanding their data-related needs to building meaningful visualizations for their organizations. Partners included District 7 City Council, Friendship Works, Women Writers Program, Women's Foundation of Boston, Community Servings, and Bridge to Calculus.

- **Guest lectured** to teach **"Common mistakes in Data Visualization"** and **taught the basics of Tableau** in the **Multi-media CS course at Boston Latin Academy High School**. **(Spring 2019)**

- Collaborated with the Chester Square Neighbors, a local community association, to meet their objectives of funding for park renovation through a design study project as part of a graduate course on Data Visualization (CS 7250 - Information Visualization: Theory and Applications). I worked directly with the community stakeholders to deeply understand their data related challenges, particularly the lack of data-driven evidence to present to the neighborhood and the city council regarding the deterioration of the park. In this project, my team and I led cross-collaboration with various community members, including historians, neighborhood association members, local residents, and policy makers and leveraged user-centered design methodologies to create impactful visualizations that helped the stakeholders communicate their issue effectively. This project underscores my ability to conduct user-centric design projects with real-world collaborators and to deliver impactful design solutions. **(Spring 2019)**

- Weekly meeting organizer at the Khoury Vis Lab **(Fall 2019 – Spring 2021)**

- Social event organizer at the Khoury Vis Lab **(Fall 2021 – Summer 2023)**

- Volunteered at the International Conference on Imaging, Vision & Pattern Recognition **(ICIVPR 2017)**

- Volunteered at the International conference on Informatics, Electronics and vision conference **(ICIEV 2014)**

MEDIA COVERAGE

- "Meet the 2025 Khoury College Award Winners"

- "Novel Framework For Implementing Design Studies Wins Best Paper At CHI 2020", **Khoury News**, Northeastern University (May 28, 2020)

PUBLICATIONS

- **An Evaluation of Temporal and Categorical Uncertainty on Timelines: A Case Study in Human Activity Recall Visualizations.**
  Potter, V., Ha, L., **Syeda, U.H.**, Stephen, I., and Borkin, M.A.
  [IEEE VIS 2025]

- **Vis Repligogy: Towards a Culture of Facilitating Replication Studies in Visualization Pedagogy and Research**
  Syeda, U.H., South, L., Raynor, J., Panavas, L., Saffo, D., Morriss, T., Dunne, C., and Borkin, M.A.
  [In *Computer Graphics Forum* of **EuroVis 2024** Education Track
  DOI: https://doi.org/10.2312/eved.20241054]

- **Process and Pitfalls of Online Teaching and Learning with Design Study "Lite" Methodology: A Retrospective Analysis**
  Syeda, U. H., Dunne, C., & Borkin, M. A.
  [In *Computer Graphics Forum* of **EuroVis 2023** (Vol. 42, No. 3, pp. 75-86)
  DOI: 10.1111/cgf.14813]

- **A State-of-the-Art Survey of Tasks for Tree Design and Evaluation with a Curated Task Dataset**
  Pandey, A., **Syeda, U.H.**, Shah, C., Guerra-Gomez, J.A. and Borkin, M.A.
  [***IEEE Transactions on Visualization and Computer Graphics, 2021****, 28(10), 3563-3584*
  DOI: 10.1109/TVCG.2021.3064037]

- **Design Study "Lite" Methodology: Expediting Design Studies and Enabling the Synergy of Visualization Pedagogy and Social Good**
  Syeda, U.H., Murali, P., Roe, L., Berkey, B. and Borkin, M.A.
  [In Proceedings of the **2020 CHI Conference** on Human Factors in Computing Systems (pp. 1-13).

DOI: 10.1145/3313831.3376829]

- **Evaluating the Effect of Timeline Shape on Visualization Task Performance**
  Di Bartolomeo, S., Pandey, A., Leventidis, A., Saffo, D., **Syeda, U.H**., Carstensdottir, E., Seif El-Nasr, M., Borkin, M.A. and Dunne, C.
  [In Proceedings of the **2020 CHI Conference** on Human Factors in Computing Systems (pp. 1-12).
  DOI: 10.1145/3313831.3376237]

- **Towards Identification and Mitigation of Task-Based Challenges in Comparative Visualization Studies**
  Pandey, A., **Syeda, U. H.**, & Borkin, M. **(2020).** Towards Identification and Mitigation of Task- Based Challenges in Comparative Visualization Studies.

- **Chester Square Park: A Case Study of Visualization for Social Good using Design Study "Lite" Methodology**
  Syeda, U.H., Murali, P. and Borkin, M.A.
  [IEEE VIS Conference, October **2019**,Vancouver, Canada.]

- **Visual face scanning and emotion perception analysis between autistic and typically developing children.**
  Syeda, U.H., Zafar, Z., Islam, Z.Z., Tazwar, S.M., Rasna, M.J., Kise, K. and Ahad, M.A.R.
  [**UbiComp '17** Proceedings of the **2017 ACM International Joint Conference on Pervasive and Ubiquitous Computing** and Proceedings of the 2017 ACM International Symposium on Wearable Computers (Mental Health: Sensing and Intervention workshop), Pages 844-853, Maui, Hawaii,USA — September 11 - 15, 2017.
  DOI: 10.1145/3123024.3125618]

SKILLS

Research
Mixed-Methods research, User-Centered Design, Usability Testing, Ethnographic Studies, Qualitative and Quantitative research methods, Experimental Design, Survey design, Grounded Theory, Project Management, User Interviews, Needfinding techniques, Open-coding, Sketching and Prototyping, Agile methodologies, Latex

Web and Databases
Responsive Web Design, Node.js, SVG, HTML, CSS

Data Science, Design and Visualization
SciPy (Pandas, NumPy & Matplotlib), Altair, Plotly, MATLAB, Figma, Adobe Creative Cloud suite (Photoshop & Illustrator), Adobe XD, Microsoft Office (PowerPoint, Word & Excel), MySQL, D3.js, Tableau

Programming Languages
JavaScript, Python, C, Assembly language (Intel 8086), GIT

Ph.D. Coursework
Information Visualization: Theory and Applications, Special Topics in Data Visualization, Human Computer Interaction, Algorithms, Advanced Algorithms, Intensive Computer Systems, Machine Learning

Teaching and other
Canvas, Canvas Studio, Panopto, WordPress, Zoom, Instructional Design, Shotcut (video editing tool)