

Aimen Gaba

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Education

University of Massachusetts Amherst

PhD in Computer Science

Amherst, MA, USA

Sep 2021 - May 2025 (expected)

- **Advisors:** Dr. Cindy Xiong Bearfield, Dr. Yuriy Brun
- **Thesis:** Natural Language and Visual Design can Influence Trust and Bias Perception in AI
- **Interests:** HCI, Data Visualization, Ethical AI, Trust in AI, Natural Language, Human perception, Fairness and Bias
- Achieved PhD candidacy with **distinction**

University of Massachusetts Amherst

MS in Computer Science, GPA: 3.9

Amherst, MA, USA

Sep 2021 - Dec 2023

- **Thesis:** How Visualization Design Affects Trust & Perceived Bias in Machine Learning
- **Courses:** Advanced Methods in HCI, Introduction to Neural Networks, Making Sense of Visual Information, Research Methods

Lahore University of Management Sciences

BS in Computer Science

Lahore, Pakistan

Aug 2014 - Jun 2018

- **Interests:** HCI, Affective Computing, Context-Aware Tools, Ed-Tech, Health Informatics
- **Courses:** Human-Computer Interaction, Computer Graphics, Topics in Interactive Computing

Work Experience

Adobe Research

Research Scientist/Engineer Intern

College Park, MD, USA

May 2024 - Aug 2024

- **Team:** Document Intelligence Lab under supervision of Dr. Ani Nenkova, Dr. Alexa F Siu, and Dr. Jack Wang
- Designed a novel prototype to include Search and Generative AI assistance in document-grounded user workflows and conducted extensive user interview studies to evaluate user preferences for generative vs. extractive responses
- **Skills:** User Interviews, Prototyping, Design Sprints, User Study Design, Quantitative Analysis

University of Massachusetts Amherst

Research Assistant

Amherst, MA, USA

Sep 2021 - Present

- Developed design recommendations for ML visualizations and visual analytics tools by investigating the impact of visualization design on fairness vs. accuracy trade-offs for decision making and identifying gender differences in decision making patterns
- Examined the impact of bias in large language models (LLMs) on trust and decision making among individuals of diverse gender identities
- Created a visualization design framework for ambiguous natural language comparisons, informing design implications through user interviews and empirical validation
- Advised by Dr. Emily Wall, Dr. Kyle Wm. Hall, Dr. Yuriy Brun, and Dr. Cindy Xiong Bearfield. Ongoing collaboration with **Tableau Research** under Dr. Vidya Setlur
- **Skills:** User-centered Design, Participant Recruitment & Interviews, Survey Design, Quantitative & Qualitative Analysis, Cognitive heuristics

Carnegie Mellon University

Visiting Researcher

Pittsburgh, PA, USA

Jul 2023 - Aug 2023

- Investigated how blind and low-vision individuals approach technology and innovation when given the opportunity to lead design efforts by employing speculative design methods (ongoing collaboration with Frank Elavsky and Dr. Dominik Moritz)
- **Skills:** Study Design, User Interviews, Thematic Analysis, Longitudinal Study, Speculative design, Human factors

Tower Technologies (Pvt.) Ltd

UX/UI Designer

Lahore, Pakistan

Jun 2019 - Mar 2020

- Constructed user personas and storyboards by conducting user research, formulated the solution with user flow diagrams and brainstorming, built the lo-fi prototypes and wire-frames, and eventually hi-fi prototypes iteratively tested by the users.
- **Skills:** User Experience (UX), Design Thinking, Adobe Photoshop, Lo-fi & Hi-fi Prototyping, Leadership

Publications

My Model is Unfair, Do People Even Care? Visual Design Affects Trust and Perceived Bias in Machine Learning

IEEE VIS, Melbourne, Australia

Aimen Gaba, Zhanna Kaufman, Jason Cheung, Marie Shvakel, Kyle Hall, Yuriy Brun, and Cindy Xiong Bearfield

Oct 2023

Comparison Conundrum and the Chamber of Visualizations: An Exploration of How Language Influences Visual Design

IEEE VIS, Oklahoma, USA

Aimen Gaba, Vidya Setlur, Arjun Srinivasan, Jane Hoffswell, and Cindy Xiong

Oct 2022

How Do We Measure Trust in Visual Data Communication?

Hamza Elhamdadi, [Aimen Gaba](#), Yea-Seul Kim, and Cindy Xiong

IEEE BELIV, Oklahoma, USA

Oct 2022

Reasoning Affordances with Tables and Bar Charts

Cindy Xiong, Elsie Lee Robbins, Icy Zhang, [Aimen Gaba](#), and Steven Franconeri

IEEE TVCG

Jan 2023

Awards & Honors

Current	Responsible Technology Coalition Programming Coordinator , University of Massachusetts Amherst	Amherst, USA
2024	GHC Scholar (UMass CICS Scholarship) , Grace Hopper Celebration	Philadelphia, USA
2021-23	CSWomen Social Events Coordinator , University of Massachusetts Amherst	Amherst, USA
2023	Tapia Scholar (UMass CICS Scholarship) , ACM Richard Tapia Conference	Dallas, USA
2022	CRA Scholar , CRA-WP for IDEALS	San Diego, USA
2022	Visiting Graduate Student with Jamie Morgenstern , University of Washington	Seattle, USA
2022	Student Volunteer at Undergraduate Research Night , University of Massachusetts Amherst	Amherst, USA
2021	\$10,000 Research Scholarship , Adobe Research	Amherst, USA
2021	\$4,000 CICS PhD Scholarship , University of Massachusetts Amherst	Amherst, USA
2021	Student Volunteer , IEEE VIS	Virtual Conference

Skills

Programming	Python (Pandas, NumPy), Vega-Lite, R, C++, HTML/CSS, D3, JavaScript
Analysis	Statistical Analysis (ANOVA, t-test, Regression), Bootstrapping, Thematic analysis
Soft Skills	Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation