

# Aimen Gaba

✉ agaba@umass.edu | 🏠 www.aimengaba.com | 🔗 linkedin.com/in/aimengaba | 🐦 @aimen\_gaba | 🎓 Google Scholar

## Research Focus

Human-Centered Artificial Intelligence, HCI, Mixed-Methods Research, Human Factors, Information Visualization, Accessibility

## Education

### University of Massachusetts Amherst

Amherst, MA, USA

PhD in Computer Science

Sep 2021 - Sep 2025 (expected)

- **Thesis:** Towards Responsible & Trustworthy AI Using Human-Centered Evaluation
- **Advisors:** Dr. Cindy Xiong Bearfield, Dr. Yuriy Brun
- **Interests:** HCI, Human-Centered AI, Responsible AI, Data Visualization, Human Perception, Natural Language
- Achieved PhD candidacy with **distinction**

### University of Massachusetts Amherst

Amherst, MA, USA

MS in Computer Science, GPA: 3.9

Sep 2021 - Dec 2023

- **Courses:** Advanced Methods in HCI, Introduction to Neural Networks, Making Sense of Visual Information, Research Methods

## Work Experience

### Adobe Research

College Park, MD, USA

Research Scientist/Engineer Intern

May 2024 - Aug 2024

- **Team:** Document Intelligence Lab
- Designed a novel prototype to include Search and Generative AI assistance further partnering with cross-functional teams to evaluate early-stage design concepts in document-grounded user workflows.
- Led qualitative user research (interviews, task-based studies) to evaluate user preferences for generative vs. extractive AI assistance.

### University of Massachusetts Amherst

Amherst, MA, USA

Graduate Research Assistant

Sep 2021 - Present

- Developed design guidelines to support fairness and inclusivity in AI systems, grounded in user interviews and empirical analysis
- Investigated the impact of bias in large language models (LLMs) on trust and decision making among individuals of diverse gender identities
- Established design recommendations for ML visualizations and analytics tools by investigating impact of visualization design on fairness vs. accuracy trade-offs for decision making, and by identifying gender-based differences in decision patterns
- Created a visualization design framework for ambiguous natural language comparisons, informing design implications through user interviews and empirical validation

### Carnegie Mellon University

Pittsburgh, PA, USA

Visiting Researcher

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

### Tower Technologies (Pvt.) Ltd

Lahore, Pakistan

UX/UI Designer

Jun 2019 - Mar 2020

- Constructed user personas and storyboards by conducting user research
- Built lo-fi prototypes and wire-frames, and eventually hi-fi prototypes iteratively tested by the users
- Formulated the solution with user flow diagrams and brainstorming

## Skills

**Programming** Python (Pandas, NumPy), R, Vega-Lite, C++, JavaScript, D3, HTML/CSS

**User Research** Qualitative and Quantitative Analysis, User Experience (UX) Design, Study Design, User Interviews, User Surveys, Usability Testing

**Analysis** Statistical Analysis (ANOVA, t-test, Regression), Bootstrapping, Thematic Analysis

**Tools** Figma, Tableau, R Studio, Adobe InDesign, Adobe Photoshop, Android Studio

## 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

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

IEEE VIS, Oklahoma, USA

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, Melbourne, Australia

Oct 2023

## Bias, Accuracy, and Trust: Gender-Diverse Perspectives on Large Language Models

Aimen Gaba, Emily Wall, Tejas Ramkumar Babu, Kyle Hall, Yuriy Brun, and Cindy Xiong Bearfield

CSCW 2026

Under Review

## How Do Blind Individuals Perceive, Design, & Innovate Assistive Technology Using Human-Centered Design

Aimen Gaba, Frank Elavsky, Lucas Nadolskis, Dominik Moritz, and Cindy Xiong Bearfield

CHI 2026

In Preparation

## Tulna: A Chain-of-Thought Approach for Interpreting Natural Language Comparisons in Visual Analytics

Vidya Setlur, Aimen Gaba, Kylie Lin, and Cindy Xiong Bearfield

IUI 2026

In Preparation

## Awards & Honors

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