

# Aimen Gaba

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## RESEARCH INTERESTS

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My research interests lie at the intersection of Human-Computer Interaction and Data Visualization. Specifically, I investigate how to make visualization recommendation systems that use natural language queries better. I am also interested in exploring the idea of fairness and trust in ML models.

## EDUCATION

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AUG 2021 - Present	<b>PhD in Computer Science</b> University of Massachusetts, Amherst CGPA: 3.84/4.0
AUG 2014 - JUN 2018	<b>BS in Computer Science</b> Lahore University of Management Sciences SCGPA: 3.12/4.0, CGPA: 3.0/4.0

## PUBLICATIONS

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IEEE VIS 2022	<b>Comparison Conundrum &amp; the Chamber of Visualizations: An Exploration of How Language Influences Visual Design</b> <a href="#">Aimen Gaba</a> , Vidya Setlur, Arjun Srinivasan, Jane Hoffswell, Cindy Xiong
BELIV WORKSHOP 2022	<b>How Do We Measure Trust in Visual Data Communication?</b> Hamza Elhamdadi, <a href="#">Aimen Gaba</a> , Yea-Seul Kim, Cindy Xiong

## WORK EXPERIENCE

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AUG 2021 - PRESENT	<b>Research Assistant</b> at University of Massachusetts Amherst. I work with <b>Dr. Cindy Xiong</b> on natural language recommendation systems and how they can better understand the ambiguity and complexity of comparison queries to recommend a visualization that best aligns with the user's intent. I also collaborate with <b>Dr. Yuriy Brun</b> to investigate how perceived fairness in ML models influences users' trust in these models.
JAN 2022 - MAY 2022	<b>Teaching Assistant</b> at University of Massachusetts Amherst. Led the course staff as the Teaching Assistant for <b>Introduction to UX Research (CS490U)</b> taught by Dr. Cindy Xiong.
JUL 2019 - MAR 2020	<b>UX/UI Designer</b> at Tower Technologies (Pvt) Ltd. 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.
FEB 2019 - MAY 2019	<b>Developer Advocate</b> at Educative Inc. Designed a course on front-end development in AngularJS, with coding challenges, illustrations, and a final course project to create an interactive to-do list web app. Spear-headed the creation of a course teaching the basics of recursion in Java step-by-step to solve hard coding challenges.
JUL 2018 - JAN 2019	<b>Management Trainee Officer</b> at United We REACH Trained HCI interns to conduct extensive user studies. Co-managed a team of 6 talented individuals working on developing and designing a 3D game for primary school children, illustrating the historical sites of Pakistan.

## PROJECTS

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APR 2022 - PRESENT	<b>Trust and Fairness in Machine Learning Models</b> Research with <b>Dr. Cindy Xiong</b> and <b>Dr. Yuriy Brun</b> to look into how individuals' trust in machine learning models varies as their accuracy and fairness are varied, particularly investigating gender fairness.
JAN 2022 - MAY 2022	<b>QuickBuy: Aiding Fast Decision Makers with Online Shopping</b> A tool that allows ordering products while shopping online with minimal cognitive load using psychological heuristics. Using this tool, users reported less information overload and mental fatigue as compared to online retailers such as Amazon.
JAN 2018 - MAY 2018	<b>Raabta: AAC for Special Children</b> A tool to explore context-aware augmented and alternative communication (AAC) systems for children with intellectual disabilities, with a primary focus on Autism and Cerebral Palsy. Thorough literature review, interviews and focus groups were carried out to understand the needs of special children, speech therapists, and teachers. The effectiveness of the tool was evaluated through questionnaire and informal interviews.
SEP 2016 - DEC 2016	<b>BloodHub: Connecting Donors to Patients</b> Designed and developed an <b>Android application</b> to connect blood donors to patients in Pakistan. The application implemented an optimum working platform developed through an in-depth analysis of user study, using the design process for analysis, prototyping, testing, and implementation.

## SKILLS

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Languages: Python, R, Java, C++, MySQL, AngularJS,  $\text{\LaTeX}$ , HTML, CSS, XML  
Tools: VegaLite, Android Studio, Invision Studio, Proto.io, Unity3D, Adobe Photoshop

## AWARDS AND EXTRACURRICULAR ACTIVITIES

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MAR 2022	<b>Attendee, CRA-WP Grad Cohort for IDEALS</b>
OCT 2021	<b>Student Volunteer, IEEE VIS Virtual Conference</b>
SEPT 2021 - PRESENT	<b>CSWomen Social Events Coordinator, UMass Amherst</b>
SEPT 2021	<b>\$4000 CICS PhD Scholarship, UMass Amherst</b>
SUMMER 2017	<b>Teacher for SATs, The Citizens Foundation</b>
SUMMER 2016	<b>Teacher for Scratch, Altaf Mehmood Foundation, PROJECT SMILE</b>
2015-2018	<b>Basketball &amp; Table Tennis team member, Lahore University of Management Sciences</b>
2015-2018	<b>Active Medical First Respondent - Certified EMS training,</b>
2012-2014	<b>100% Academic Scholarship, Lahore Grammar School</b>
2012	<b>Academic Excellence Award for students with an outstanding result, Bloomfield Hall School</b>