Grace Guo

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I am interested in research at the intersection of AI, learning sciences and human-computer interaction. My current projects focus on AI for online education, causal inference, and visual analytics.

Education

Georgia Institute of Technology — *Atlanta, GA*

PhD in Human-Centered Computing — *Current*

- Advised by Dr. Alex Endert

Carnegie Mellon University — *Pittsburgh, PA*

BS in Cognitive Science and Human-computer Interaction — *2018*

- QPA: 3.91, Dean's List High Honors

Work Experience

Georgia Institute of Technology, School of Interactive Computing — *Atlanta, GA*

Graduate Research Assistant — *Aug 2019 - Current*

- Advised by Dr. Alex Endert

International Business Machines Corporation (IBM) — *Cambridge, MA*

Research Intern, Computational Healthcare — *May 2023 - Aug 2023*

- Developed visual analytics tools for counterfactual explanations of AI model predictions of cardiac MRI and associated disease phenotypes
- Preparing manuscript for submission to ACM CHI 2024

International Business Machines Corporation (IBM) — *Cambridge, MA*

Research Intern, Computational Healthcare — *May 2022 - Aug 2022*

- Worked with the IBM Healthcare Analytics team on causal inference problems
- Developed (and currently maintain) Causalvis, an open source Python visualization package to support causal inference analysis
- Conducted user studies and presented study paper at ACM CHI 2023

Pacific Northwest National Laboratory — *Richland, WA*

Research Intern, National Security Internship Program — *May. 2020 - Aug 2020*

- Designed and implemented DietParselantro, a Jupyter widget for textual data classification
- Implemented VAINE, a system for interactively estimating causal effects in natural experiments

Singapore University of Technology and Design — *Singapore*

Researcher, Meta-design Lab — *Aug. 2018 - Aug. 2019*

- Studied the role of data visualizations in industry decision making
- Created an open source svelte visualization toolkit for flexible, componentized data visualization

Publications

Causalvis: Visualizations for Causal Inference

Grace Guo, Ehud Karavani, Alex Endert, Bum Chul Kwon

ACM Conference on Human Factors in Computing Systems (CHI). 2023.

VAINE: Visualization and AI for Natural Experiments

Grace Guo, Maria Glenski, ZhuanYi Shaw, Emily Saldanha, Alex Endert, Svitlana Volkova, Dustin Arendt

IEEE Visualization Conference (VIS). 2021.

A Survey of Human-Centered Evaluations in Human-Centered Machine Learning

Fabian Sperrle, Mennatallah El-Assady, Grace Guo, Rita Borgo, Duen Horng Chau, Alex Endert, Daniel Keim

Computer Graphics Forum (EuroVis). 2021.

Florence: a Web-based Grammar of Graphics for Making Maps and Learning Cartography

Ate Poorthuis, Lucas Van der Zee, Grace Guo, Jo Hsi Keong, Bianchi Dy

Cartographic Perspectives. December 2020.

Teaching

CS4460: Introduction to Information Visualization — *Atlanta, GA*

Georgia Institute of Technology — *Spring 2023*

CS7455: Issues in Human-Centered Computing — *Atlanta, GA*

Georgia Institute of Technology — *Spring 2022*

CS7450: Information Visualization — *Atlanta, GA*

Georgia Institute of Technology — *Fall 2020*

15-112: Fundamentals of Programming and CS — *Pittsburgh, PA*

Carnegie Mellon University — *Fall 2015, Spring 2016*

Talks

Causalvis: Visualizations for Causal Inference

Making Sense & Decisions with Visualization

ACM Conference on Human Factors in Computing Systems (CHI). 2023.

Flexible and Expressive Augmentation of Domain Specific Visualizations

Doctoral Colloquium

IEEE Visualization Conference (VIS). 2022.

VAINE: Visualization and AI for Natural Experiments

AI+VIS

IEEE Visualization Conference (VIS). 2021.

Survey of Evaluations in Human-Centered Machine Learning: Dimensions for Measuring Trust, Interpretability and Explainability

STARs

EuroVis. 2021.

Skills

Frameworks and Libaries	React, D3, WebGL, IPywidgets, Vue, Svelte
Programming	Python, Javascript, C
Tools	Git, Jupyter Lab, Adobe Suite
Research	Surveys, Interviews, Think-alouds, Expert Evaluations
Design	Affinity Diagramming, Prototyping, Wireframing, Participatory Design