Ziwei Gu

CONTACT INFORMATION

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RESEARCH INTERESTS

Human-Computer Interaction (HCI)
Machine Learning, Data Mining, Data Visualization, Social Computing, Algorithm Fairness

EDUCATION

Cornell University, Ithaca, New York

M.Eng. Computer Science, January 2021 – May 2021
GPA: 3.94/4.00

Cornell University, Ithaca, New York

B.A. Computer Science, Magna cum laude, August 2017 – December 2020
B.A. Mathematics, August 2017 – December 2020
GPA: 3.83/4.00

PEER-REVIEWED PAPERS

Jing Nathan Yan, **Ziwei Gu**, and Jeffrey M Rzeszotarski. Tessera: Discretizing Data Analysis Workflows on a Task Level. In ACM CHI Conference on Human Factors in Computing Systems (CHI '21), May 8-13, 2021, Yokohama, Japan.

Ziwei Gu, Jing Nathan Yan, and Jeffrey M Rzeszotarski. Understanding User Sensemaking in Machine Learning Fairness Assessment Systems. In WWW'21: The Web Conference 2021 (WWW'21), April 19-23, 2021, Ljubljana, Slovenia.

Jing Nathan Yan, **Ziwei Gu**, Hubert Lin, and Jeffrey M Rzeszotarski. Silva: Interactively Assessing Machine Learning Fairness Using Causality. In ACM CHI Conference on Human Factors in Computing Systems (CHI '20), April 25-30, 2020, Honolulu, HI, USA.

ON-GOING WORK

Ziwei Gu, Jing Nathan Yan, and Jeffrey M Rzeszotarski. "Involving Human Feedback in the Design of Machine Learning Metrics." **Currently in Preparation**

"Metric Interpretability: A Survey of Metric Use and Development in Machine Learning Research." **Currently in Preparation**

ACADEMIC RESEARCH

Cornell University, Ithaca, New York
Undergraduate Research Assistant **May 2019 – Present**

- Designed, built, and evaluated Silva, an interactive machine learning fairness assessment tool that helps people find and reason about sources of bias in datasets and classifiers. [Paper]
- Mined data analyst event logs, extracted prominent features, and developed abstractions of user actions to discretize user workflow into goal-directed segments. [Paper]
- Identified sensemaking patterns in users' bias exploration through "think aloud" user studies; Reached insightful conclusions on the different mechanisms by which 3 AI debiasing tools shape users' hypotheses and goals. [Paper]
- Initiated a project on human-centered machine learning and developed a novel visual analytic tool that enables human-in-the-loop aggregation of fairness and utility metrics to determine socially desirable outcomes.
- Adviser: Professor Jeff Rzeszotarski

Undergraduate Researcher **January 2019 – May 2019**

Proposed a new task formulation for open information extraction, modeled as a sequence to sequence transduction task; Trained a deep Transformer model and evaluated it on a large benchmark dataset, showing that it outperformed several existing tools without the dependencies on other NLP tools. [Paper]

- Advisor: Professor Claire Cardie

Graduate Researcher **January 2021 – May 2021**

Developed a fast, interactive dashboard illustrating clustering results on large population datasets.

- Advisor: Professor Madeleine Udell

INDUSTRY RESEARCH

Lyft, San Francisco, California
Data Scientist Intern/Research Intern **June 2020 – July 2020**

- Estimated the opportunity size of Lyft Family and promoted the successful launch of this feature.
- Clustered rider profiles and recommended incentive products targeting each segment of users.
- Upgraded Lyft's data analysis and visualization tool after seeking input from scientists and engineers across the company.

Data Scientist **August 2021 – Present**

- Experimented with new interface designs and initiatives that increased driver engagement by 8%.

TEACHING EXPERIENCE

Operating Systems (CS 4410) **January 2021 – May 2021**
Graduate Teaching Assistant

- Instructor: Professor Robbert Van Renesse and Professor Lorenzo Alvisi

Machine Learning (CS 4780) **August 2020 – December 2020, August 2019 – December 2019**
Teaching Assistant

- Instructor: Professor Thorsten Joachims

Computer System Organization and Programming (CS 3410) **January 2020 – May 2020**
Teaching Assistant

- Instructor: Professor Hakim Weatherspoon

Object-Oriented Programming and Data Structures (CS 2110) **August 2018 – May 2019**
Teaching Assistant

- Instructor: Professor David Gries

OTHER EXPERIENCE

Project Lead, Statistics Faculty Award winner, **Cornell Data Science Team** **February 2018 – May 2020**

Resident Advisor, **Clara Dickson Hall, Cornell University** **January 2019 – June 2021**