

Ruoxi (Anna) Shang

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Education

UNIVERSITY OF WASHINGTON

Ph.D. Student in Human-centered Design and Engineering

Sep 2020 – Present

Research Interests: Human-centered Explainable AI, Human-AI interaction, Algorithmic Experience

UNIVERSITY OF CALIFORNIA, BERKELEY

B.A. in Applied Mathematics, Statistics with a focus on Data Science

Aug 2016 – May 2020

Publications

Ruoxi Shang, Kevin Feng, Chirag Shah. Understanding Lay Users' Needs of Counterfactual Explanations for Everyday Recommendations. 2022. ACM Conference on Fairness, Accountability, and Transparency (ACM FAccT 2022).

De Clercq, Djavan, **Ruoxi Shang** et al. Machine learning powered software for accurate prediction of biogas production: A case study on industrial-scale Chinese production data. *Journal of Cleaner Production*, 218 (2019): 390-399.

De Clercq, Djavan, Zongguo Wen, Fan Fei, Luis Caicedo, Kai Yuan, and **Ruoxi Shang**. Interpretable machine learning for predicting biomethane production in industrial-scale anaerobic co-digestion. *Science of The Total Environment* (2019): 134574.

Posters & Short Papers

Ruoxi Shang, Zile Xiao, Jenna Frens, and Cecilia Aragon. Giving and Receiving: Reciprocal Review Exchange in Online Fanfiction Communities. 2021. *Companion Publication of the 2021 Conference on Computer Supported Cooperative Work and Social Computing* (pp. 171-174).

Niamh Froelich, Arthur Liu, **Ruoxi Shang**, Zile Xiao, Travis Neils, Jenna Frens, and Cecilia Aragon. Reciprocity in Reviewing on Fanfiction.net. 2021. *International Conference on Human-Computer Interaction*. Springer, Cham, 2021.

Ruoxi Shang, A. Zoglauer, Rapid gamma-ray burst localization aboard the e-Astrogam satellite using a 3D convolutional neural network. Poster presented at Bay Area Machine Learning Symposium 2019, Oct 16, San Francisco, CA.

Research Experience

RESEARCH ASSISTANT

University of Washington

Sep 2020 – Present

Selected projects:

- Analyzing reciprocal reviewing behavior in online fanfiction community with large-scale review exchange data using network analysis and regression analysis.

- Examining how HCI academia and industry influence each other through visualizing the keyword usage in paper publications over time.
- Understanding users' needs in *why not* explanations for recommended content in everyday intelligent applications.

RESEARCH INTERN

Daylight Security Research Lab | Center for Long-Term Cybersecurity | UC Berkeley

May 2019 – May 2020

Cybersecurity Imagery Project

- Applied deep learning CV models pre-trained on ImageNet to extract the feature distribution from the Cybersecurity Imagery Dataset (two years of Google Image Search results). Performed exploratory data analysis on the Cybersecurity Imagery Dataset to depict how cybersecurity is depicted in media overtime.

DATA SCIENCE ASSOCIATE

Bio-Tesseract

Jan 2018 – Apr 2020

Machine Learning Powered Biogas Production Optimization

- Trained a set of ML models on production dataset and developed a user interface to help biogas facilities visualize how different inputs affect their biogas output level and enhance their operational productivity.

RESEARCH APPRENTICE

Berkeley Institute for Data Science | UC Berkeley

Jan 2019 – Dec 2019

Rapid Gamma-Ray Burst Localization with Deep Learning

- Implemented a 3D convolutional neural network architecture with TensorFlow inspired by VoxNet to improve the data analysis pipeline for Compton telescopes (e.g. COSI, AMEGO). Proposed improvements for the 3D convolution network layout and achieved an 82% decrease in RMS Angular Deviation for prediction accuracy.

Skills

Programming & Data Science: Python, R, SQL, Data Analysis, Data Visualization, Machine Learning, NLP

Quantitative Methods: Experimental Design, Statistical Analysis

Qualitative Methods: Interview, Survey, Thematic Analysis, Grounded Theory, Usability Testing

Teaching and Mentoring

- Teaching Assistant and Mentor for [HCDE Undergraduate Capstone Project teams](#) Winter & Spring 2022
- Teaching Assistant for HCDE 411 Data Visualization Fall 2021
- Teaching Assistant for HCDE MS Capstone Project Class Spring 2021
- Course Grader for UC Berkeley Math 113 (Abstract Algebra), Math 55 (Discrete Mathematics)
- Teaching Assistant for Mathematical Thinking Summer Program with Professor Po-Shen Loh Summer 2017