Ruoxi (Anna) Shang

Researcher in Human-computer Interaction (HCI)

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Education

UNIVERSITY OF WASHINGTON

PhD Student in Human-centered Design and Engineering
Sep 2020 – Present

- Research Interests: Human-centered Explainable AI, Human-AI interaction, Algorithm Experience
- Advisors: Gary Hsieh, Chirag Shah

UNIVERSITY OF CALIFORNIA, BERKELEY

BA in Applied Mathematics, Statistics with a focus on Data Science
Aug 2016 – May 2020

- Coursework: *Abstract Algebra, Numerical Analysis, Complex Analysis, Linear Modeling, Deep Learning, Data Structures, Causal Inference, Optimization Models in Engineering, Machine Learning, Natural Language Processing, Stochastic Process*

Skills

- Programming: Python, R, SQL, Machine Learning, Data Analysis, Data Visualization
- UX Research Methods: Statistical modeling, Experiment, Survey, In-depth interviews, Qualitative Coding

Publications

- *[Under Review]* **Ruoxi Shang**, Kevin Feng, Chirag Shah. Understanding Lay Users' Needs of Counterfactual Explanations for Everyday Recommendations. 2022. Under review for the ACM Conference on Fairness, Accountability, and Transparency (ACM FAccT 2022).
- **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.
- 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.
- **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.
- 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.

Teaching

- 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

Experience

RESEARCH ASSISTANT

University of Washington
Sep 2020 – Present
Selected projects:

- Led a research project on analyzing reciprocal reviewing behavior in online fanfiction community with large-scale review exchange data
- Led a research project on understanding how HCI academia and industry influence each other through analyzing and visualizing the keyword usage in paper publications over time

RESEARCH INTERN

Daylight Security Research Lab | Center for Long-Term Cybersecurity | UC Berkeley
May 2019 – May 2020

- Cybersecurity Imagery
    - 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 provide a baseline understanding of 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 predictive models (e.g. KNN, SVM, Random Forest, XGBoost) on biogas input and output dataset to help biogas facilities enhance their operational productivity.
    - Collaborated with new researchers to train and optimize the previously proposed machine learning predictive system with larger available data for better results.

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.
    - Applied a similar methodology to localize the origin of Compton-scattered gamma-rays from the Gamma-Ray Bursts with the detection of gravitational waves.