Jun Yuan

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EDUCATION

2017-2022   **PhD in Computer Science, New York University** | New York, NY, US

2013-2017   **BS in Software Engineering, Fudan University** | Shanghai, China

RESEARCH INTERESTS

Explainable AI (xAI), Data Visualization, and Human Computer Interaction.
I'm highly interested in using data visualization to help model developers understand and debug their models.

WORK EXPERIENCE

2022 Summer   Research Intern   Apple, Sunnyvale
- Worked in TDG Algorithm Team, mentored by Marco Cavallo.
- Designed and implemented a visual analytics system for model diagnosis with image data.
- A paper in preparation.

2021 Summer   Research Intern   Salesforce Research, Palo Alto (remote)
- Worked with Dr. Jesse Vig and Dr. Nazneen Rajani on a project of error analysis for NLP models.
- Designed a human-in-the-loop pipeline and implemented an interactive system involving human+AI.
- A paper accepted by ACM IUI 2022.

2019 Summer   Visual Analytic Intern   Bosch, Sunnyvale
- Worked with Dr. Bilal Alsallakh on a project of model explanations for deep learning models including image segmentation and object detection tasks.
- A paper accepted by ICLR 2021.

2016-2017   Research Assistant   NYU, Shanghai
- Worked with Prof. Nan Cao to design interactive visual systems for anomaly detection of ECG data.
- A poster accepted by IEEE VIS 2017.

2016 Summer   Technology Analyst   Goldman Sachs, Hong Kong
- Data mining and analysis of client order data to find target clients
- Designed and implemented predictive models (multi-layer perceptron) for sales traders.

2015 Summer   Engineering Practicum Intern   Google, Shanghai
- Full-stack development of an advertising platform: *DoubleClick Sales Manager*.

PUBLICATIONS

iSEA: An Interactive Pipeline of Semantic Error Analysis for NLP Models
Jun Yuan, Jesse Vig, Nazneen Rajani. ACM IUI, 2022 [paper]

SUBPLEX: A Visual Analytics Approach to Understand Local Model Explanations at the Subpopulation Level
Jun Yuan, Yeuk-Yin Chan, Kyle Overton, Brian Brian, Kim Rees, Luis Gustavo Nonato, Enrico Bertini, Cláudio T. Silva. IEEE Computer Graphics & Applications. [paper]

Visual Exploration of Machine Learning Model Behavior with Hierarchical Surrogate Rule Sets
Jun Yuan, Brian Barr, Kyle Overton, Enrico Bertini. (under review)

Context Sight: Model Understanding and Debugging via Interpretable Context
Jun Yuan, Enrico Bertini.
Workshop on Human-In-the-Loop Data Analytics (HILDA), ACM SIGMOD, 2022 [paper]

An Exploration And Validation of Visual Factors in Understanding Classification Rule Sets
Jun Yuan, Oded Nov, Enrico Bertini. IEEE VIS, 2021 [paper]

AdViCE: Aggregated Visual Counterfactual Explanations for Machine Learning Model Validation
Steffen Holter, Oscar Gomez, Jun Yuan, Enrico Bertini. IEEE VIS, 2021 [paper]

Mind the Pad -- CNNs Can Develop Blind Spots
Bilal Alsallakh, Narine Kokhlikyan, Vivek Miglani, Jun Yuan, Orion Reblitz-Richardson.
ICLR 2021 (spotlight) [paper]

mTSeer: Interactive Visual Exploration of Models on Multivariate Time-series Forecast
Ke Xu, Jun Yuan, Yifang Wang, Claudio Silva, Enrico Bertini. SIGCHI 2021[paper]

ViCE: Visual Counterfactual Explanations for Machine Learning Models
Steffen Holter, Oscar Gomez, Jun Yuan, Enrico Bertini. ACM IUI 2020 [paper]

ECGLens: Interactive ECG Classification and Exploration
Jun Yuan, Siyao Fang, Xiang Huang, Nan Cao. Poster for IEEE VIS (2017) [paper]

PRESENTATION

2022 Apr.   Invited lecture at The College of William & Mary, class CSCI780 Data Visualization, "Visualization for Machine Learning Explanations".

2020 Oct.   Presentation at Doctoral Colloquium of IEEE VIS 2020, "Interpreting Black-box Machine Learning Models By Visually Exploring High-Fidelity Surrogate Rules".

SKILLS

Technology: Python, Java, Javascript, D3.js, React, Flask, Docker, TensorFlow, TensorBoard

TEACHING EXPERIENCE (Graduate Instructor at NYU)
22'Fall, 19'Fall   Information Visualization
22'Spring   Visualization for Machine Learning
20'Spring, 19'Spring   Visual Analytics