

Yuanhao(Terry) Lu

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EDUCATION

University of Southern California

B.S. in Applied Math & Computer Science, GPA: 3.97/4.00

Los Angeles, USA
August 2019 - May 2023

Awards: Cathay Bank Scholarship, Morning Light Foundation Scholarship, Margaret P. and Paul T. Haltom, Sr. Endowed Scholarship, USC Provost Fellow, USC CURVE Fellow, USC Academic Achievement Award, Phi Kappa Phi, Phi Beta Kappa.

Exams & Certifications: CFA Level 1 Candidate, FINRA SIE, Certified MATLAB Associate, COMPTIA A+

PUBLICATION

[1] Robust Scenario Interpretation from Multi-model Prediction Efforts

Yuanhao Lu, Ajitesh Srivastava

Special Interest Group on Knowledge Discovery and Data Mining (SIGKDD-UC), 2022.

RESEARCH EXPERIENCE

Research Assistant

Advisor: Professor Larry Harris

Los Angeles, USA
March 2022 - Present

○ Stock Price Clustering and Discreteness

- Used high performance (pyarrow) and parallel computing frameworks (dask) on large-scale TAQ dataset to analyze price clustering frequency distributions, conditioned on odd-lots and exchange types.
- Utilized Wharton WRDS database and optimized data storage with Apache parquet.
- Analyzed the cross-sectional interarrival times of trades and proposed potential explanations to resolve behavioral anomalies in trading. Working paper in progress.

Research Assistant

Advisor: Professor Ajitesh Srivastava

Los Angeles, USA
September 2021 - Present

○ Robust Scenario Interpretation from Multi-model Prediction Efforts

- Contributed and implemented a statistically sound method to combine the results of multi-model scenario predictions, with the aims to robustly analyze the predictions from the [COVID-19 scenario hub](#).
- The results generated for COVID-scenario hub round 14 are presented as evidence to compare the risk-focused booster policy and expanded booster vaccination campaign.

○ Efficient Multi-dimensional Dynamic Time Warping

- Reproduced the algorithm for different variants of the Dynamic Time Warping (DTW) algorithms.
- Contributed and implemented a 'fast' version of DTW to ensemble the results of COVID-19 scenario prediction. Working paper in progress.

AI for Dynamic Systems (AIDyS) Lab @ USC, Research Fellow

Advisor: Professor Rahul Jain

Los Angeles, USA
September 2021 - Present

○ Robustness Bounds on Transfer Reinforcement Learning

- In the context of a Markov Decision Process (MDP) with a δ -difference in reward, derived bounds on the convergence behavior of transfer value iteration.
- Working on deriving a bound for the value function with respect to a δ -difference in the transition probabilities.

○ Imitation Reinforcement Learning (IRL)

- Generated expert trajectories with PPO, TRPO, and A3C on multiple OpenAI gym's environments.

WORK EXPERIENCE & EXTRACURRICULARS

China Securities Co., Ltd

Beijing, China

Investment Banking Intern (TMT Office)

May – August 2021

- Analyzed recent trends and in delisting and privatizing Chinese-based U.S exchange listed companies; conducted case studies on individual companies regarding how specific regulations are met.
- Analyzed central and provincial government policies on digital twin, metaverse, and industrial internet. Prepared presentations that led to the successful sales of shares to private investors.
- Prepared and organized annual compliance reports for listed companies underwrote by China Securities.

Footage Foundation

Los Angeles, USA (Remote)

Business Research Intern

February 2022 – Present

- Evaluated business plans and optimized cost structures to launch and maintain [FemSMS](#), a non-profit initiative to fundraise and promote women’s mental and physical health, with a focus on Ukraine.
- Prepared data visualization on the user feedback of FemSMS to prove its validity to potential donors.
- Collected, via web scraping, the contact information of potential donors to help sustain daily operations.

WPP China

Shanghai, China

Summer Analyst Intern

July -August 2021

- Cleaned data for downstream pipelines and resolved missing data with statistical methods.
- Prepared data visualization and presentation to evaluate commercial decisions.

QuantSC

Los Angeles, USA

Vice President

September 2021– Present

- Led a group of three people to develop quantsc, an open-source quantitative library listed on [PyPI](#), and presented the package to a panel of industry professionals from IMC and Citadel.
- Explored the possibility of variance-reduction of predictive stock pricing models (LSTM, LightGBM) using synthetic data generated by an adversarial network.

SKILLS & COURSEWORK

Programming Languages & Toolkits: Python, Java, JavaScript, C, C++, MATLAB, Mathematica, MySQL, Pytorch, Numpy, Pandas, Dask, TensorFlow, Zsh & Bash, WRDS

Graduate Coursework: Time Series Analysis (MATH-545), Stochastic Processes (EE-512)