TIAN XIE

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EDUCATION

Columbia University in the City of New York New York City, NY

- *Master of Science in Operation Research* (ML & AI Track) Sept. 2021 – Expected Dec. 2022

University of Michigan Ann Arbor, MI

Bachelor of Science in Data Science Sept. 2019 – May 2021

- **GPA: 3.98/4.00** (Top 3%, Graduated with Highest Distinction)
- Honors/Awards: James B. Angell Scholar (2021), University Honors (2020), University Honors (2019)
- Relevant Courses: Database Management**,** Programming and Data Structure, Discrete Mathematics, Applied Regression Analysis, Data Mining, Introduction to Biostats

Sun Yat-sen University (SYSU) Guangzhou, China

Major in Statistics Sept. 2017 – Jul. 2019

- **GPA: 3.9/4.0**
- Honors/Awards: First Class Scholarship (2018), Zhong Youchu Scholarship (2018), Honorable Mention at Interdisciplinary Contest in Modeling
- Relevant Courses: Mathematical Statistics, Probability Theory, Numerical Analysis, Functions of a Complex Variable, Honors Calculus, Advanced Algebra

RESEARCH EXPERIENCE

Post Selection Inference for Multi Task Lasso

Department of Statistics, the University of Michigan Remote

Undergraduate Research Assistant, supervised by Prof. Liza Levina Jan. 2021 – Present

- Developed algorithms to derive the conditional distribution of regression coefficients based on the selected model by multi task lasso and get the correct pivot for the coefficients' confidence interval, which will make both model selection and inference possible within the same set of data
- Developed Python programs to perform numerical simulations to compare the performance or our algorithm and naive models for assessment; Using multi-processing methods to increase computing efficiency
- Finished a capstone report and the numerical analysis part of a paper based on the project

Portfolio Construction from Different Equity Characteristics

Department of Management Science, City University of Hongkong Remote

Research Assistant, supervised by Prof. Guanhao Feng Jun. 2020 – Mar.2021

- Extracted financial and accounting data to develop a self-updating system in Python; calculated 447 anomalies by time series regression, cross-section regression and other methods, achieving a correlation of 0.95 with correct data
- Ranked over 2,000 stocks listed at NYSE using anomalies and market equity to construct a value-weighted factor
- Built data dictionary for anomalies to allow other researchers replicate our results

Prediction of Parkinson's Disease Progression with Supervised and Unsupervised Learning Methods

Electrical and Computer Engineering Dept., University of California San Diego Remote

Research Assistant, supervised by Prof. Pengtao Xie Apr. 2020 – Jul. 2020

- Developed Time Series Machine Learning models to predict the progression of patients suffering from Parkinson's Disease
- Built baseline models using Supervised Learning Methods; conducted multiple linear regressions and logistic regressions with Python and R and used Lasso to select 60 features from 374 in total
- Constructed various Deep Learning models (e.g. MLP, FCN, CNN) using 60 selected features and implemented data augmentation to improve model performance

Research on Innovation, Risks and Supervision of Digital Financial Inclusion
FinTech Research Group at Finance Department, Sun Yat-sen University Guangzhou, China
Student Research Assistant, supervised by Prof. Yan Zeng Oct. 2018 – Aug. 2019

- Research project on digital inclusive finance funded by the National Social Science Fund in China
- Conducted research of financial inclusion in the digital age, developed a two-period mathematical model to optimize efficiency in the crowdfunding market
- Completed three articles on hotspot issues in Digital Financial Inclusion published by China Social Science Press (ISBN: 978-7-5203-4552-1), including research on how the Internet will influence consumer finance and whether it is necessary for the government to encourage crowdfunding

INTERNSHIP EXPERIENCE

Kuaishou Technology Co., Ltd Shenzhen, China
Strategy Algorithm Engineer Mar. 2021 – Apr.2021

- Finished feature selection to distinguish bad users who post spam ads; Used Hive SQL to extract data at 10TB level and used Numpy and Pandas for data cleaning
- Developed two key-words based strategies to find bad users who direct people to harmful sources with accuracy larger than 95%; These strategies are now operating online
- Built an anomaly detection model using Isolation Forest by Python to find users posting spam information in comments. The model can find over 6000 bad users everyday with accuracy larger than 85% and recall 50%.

Zmate Quant Tech Ltd. Shenzhen, China
Quantitative Financial Analyst May 2020 – Jul. 2020

- Calculated Global/Rolling Spearman Correlation of minute-level signals of different futures contracts (stock index futures, treasury futures, and commodity futures) in Python/R; evaluated quality of signals with correlation map
- Selected signals with high correlation by PCA among 121 different technical signals affecting the prices of futures; Successfully selected 26 predictors and decreased prediction error of the model by 54%
- Extracted day-level price data of futures from minute-level data in Mongodb database by Python; calculated signal values and used linear regression to predict short-term period return of these futures

DongXing Securities Ltd Shenzhen, China
Assistant of Investment Banking Department Jul. 2019 – Aug. 2019

- Analyzed government policies about Public-Private Partnership (PPP) projects; participated in due diligence with accountants and completed worksheets and reports during preferred stock offering process by TieHan Ecology
- Categorized companies intending to be listed in "Star Market" by their financial condition; used asset liabilities ratio to predict the probability of the company's IPO in Excel

LEADERSHIP EXPERIENCE

The Academic and Career Development Association at Sun Yat-sen University Guangzhou, China
Director Sept. 2017 – Jun. 2019

- Led a 15-person team to help organize activities for academic and career success (e.g., KPMG Career Fair, PwC Alumni Association, Citibank Mock Interview, Freshmen Academic Transition Lectures)
- Took charge of member recruitment for Student Union
- Organized a mathematical modeling competition in the field of Actuarial Science sponsored by Ping An Insurance Group

LANGUAGE & TECHNICAL SKILLS

- **Computer Skills:** C++, Python, R, MATLAB, SAS, SQL, Tableau
- **Languages**: Mandarin (native), English (fluent, TOEFL: 114, GRE: V160+Q170)