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Nuo Yuan

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EDUCATION

Questrom School of Business, Boston University
Boston, MA
Doctor of Philosophy in Business Administration, 2021-2026 (expected)
Operations and Technology Management (OTM)
School of Arts and Sciences, Tufts University
Medford, MA
Bachelor of Science in Pure Mathematics and Political Science, 2016-2020
Thesis: Is the U.S. Electoral System in Need of Change? A Computational Study of Two Simple Alternatives to Plurality Voting
Thesis Advisor: Prof. Christoph Borgers

RESEARCH INTERESTS

Empirical operations management, computational social sciences, experimental design for platform economy, algorithmic mechanism design

AWARDS AND HONORS

Five-year full-tuition scholarship, Questrom School of Business, Boston University, 2021-2026
High Thesis Honour, Department of Mathematics, School of Arts and Sciences, Tufts University, 2020 (1/60)
Dean's List, School of Arts and Sciences Tufts University, 2016-2020

PROJECTS

The Dynamics of Political Legitimacy: An Examination of Public Anger and Government Response during the COVID-19 Pandemic Lockdown in China

Group project for the Summer Institute in Computational Social Science (SICSS), NYU Shanghai, 2023

Joint work with Hao Wang, Lin Qi, Jia Chen, Qi Wang

- A group project representing an initial effort to investigate how authoritarian regimes maintain political legitimacy when it is under threat;
- Initial empirical analyzes examine the causal links between the presence of a restrictive lockdown and people's tendency to voice a complaint online, the salient topic(s) contained in a complaint, and the speed and quality of a government reply using econometric methods such as DiD, statistical ML methods such as structural topic modeling, and DL methods such as BERTopic;
- Presented the initial empirical findings to other institute participants;
- Final project deliverables include a project proposal and presentation slides, laying the foundation for later project development into a full-fledged manuscript suitable for publication.

A Comparative Study of Portfolio Optimization with Convex Risk Constraints
Final project for graduate-level Convex Optimization at Tufts University
Joint work with William (Billy) Wang

- A group project comparing the in-sample & out-of-sample performances of portfolio optimization under two convex risk constraints: Conditional Value at Risk (CVaR) and Conditional Drawdown at Risk (CDaR);
- Independently formulated portfolio optimization problems under CVaR and CDaR for both in-sample (exactly) and out-of-sample (approximately) cases as a linear program;
- Collaborated with my coauthor on conducting numerical experiments based on real-world historical return data scraped from Yahoo Finance API using Google Colab;
- Collaborated with my coauthor on presenting the study to a student audience with varying degrees of familiarity with portfolio management;
- The instructor reacted favorably to the final report submission and considered it suitable for publication.

MixedNB
https://github.com/BenYuan1998/mixedNB
Sole contributor

- A GitHub repository hosting a Python class for model training and predictive decision-making using the mixed Naïve Bayes classifier able to accommodate both continuous and discrete attributes. Two point-estimate methods (MLE and MAP) are available for model fitting.

RESEARCH EXPERIENCES

Questrom School of Business, Boston University
Boston, MA, US
Co-author (working with Prof. Marcus Bellamy)

- Empirically investigating the effect of board female representation on a firm's ESG performance based on the Refinitiv database;
- Formulated and tested an identification strategy for an instrumental variable framework, exploiting the passage of Senate Bill 826;
- The findings of this study can inform policies and practices that promote diversity in corporate leadership and enhance firm performance.

School of International Studies, Peking University
Beijing, China
Research Assistant (working with Prof. Xiaoyu Lu)

- Assist Prof. Xiaoyu Lu in his research on investigating how the COVID-19 pandemic has impacted partisan polarization in the U.S. Congress by being responsible for:
  1) conducting preliminary literature survey and review
  2) drafting the research paper outline (including the data collection plan)
  3) applying for access to and scraping tweets satisfying the data collection requirements using the various endpoints available under the Academic Project Product Track of the Twitter API
  4) building a data-preprocessing pipeline in Python

5) building ML & parametric statistical models, analyzing and visualizing model outcomes
6) drafting the first draft of the entire manuscript

School of Information Science and Technology, ShanghaiTech University
Shanghai, China
Research Assistant (working with Prof. Lu Sun)

- Developed an MF-based recommendation learning algorithm named De-biased Sentiment Matrix Factorization (DSMF) that exploits user feedback as side information and de-biases the training data with inverse propensity weighting (IPW) and implemented the algorithm on real-world large-scale datasets to demonstrate its superior performance to other MF-based recommendation learning algorithms.

PROFESSIONAL EXPERIENCES

Center for China and Globalization (CCG)
Beijing, China
Quantitative Research Intern
CMIG International Holding Pte. Ltd.
Shanghai, China
Market Analyst Intern

SKILLS

Programming languages/database/statistical software: Python, Java, C++, SQL, NetLogo, MATLAB, STATA, R, SPSS
Text editing software: Microsoft Word, Pages, LaTeX
Operating systems: Windows, MacOS, Linux