Haotian XIE

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RESEARCH INTERESTS

- Data-driven and human-centered decision-making
- Supply chain and transportation management
- Nonequilibrium statistical physics and information theory

EDUCATION

M.S. Industrial Engineering & Logistics Management, The University of Hong Kong Sep 2024 -
Relevant Course: Operational Research, Data-driven Optimization, Logistics and Transportation Systems

B.S. System Science & Engineering, Beijing Normal University (BNU) Sep 2020 - June 2024
Relevant Course: Mathmatics, Physics, Systems Engineering, Systems Optimization, Game Theory, Agent-based Modeling, Dynamic System analysis, Artificial Intelligence
Thesis: "*Convergence of complex dynamic networks based on Vicsek model*"
(Excellent Graduation Thesis, Advisor: Prof. Zengru DI)

B.Ec. Finance, Beijing Normal University (BNU) Sep 2020 – June 2024
Relevant Course: Statistics, Micro- & Macro-economics, Econometrics, Finance, Accounting
Thesis: "*Credit risk of blockchain-driven supply chain finance enterprises based on MCDM*"
(Excellent Graduation Thesis, Advisor: Prof. Lei CHEN)

PUBLICATIONS

* CORRESPONDING AUTHOR

PREPRINT ARTICLES

[1] **Xie, H.**, & Tsang, Y.*. An intelligent system to explore barriers of decentralized autonomous organizations in e-commerce supply chains. (Under review at *Engineering Applications of Artificial Intelligence*)

[2] **Xie, H.**, Liu, H.,& Tang, Y.*. Identifying extreme precipitation using nonequilibrium thermodynamics. (Under review at *Communications Physics*)

PEER-REVIEWED JOURNAL ARTICLES

[3] **Xie, H.***, Li, Y., Pu, Y., Zhang, C., & Huang, J. (2024). Evaluating airline service quality through a comprehensive text-mining and multi-criteria decision-making analysis, *Journal of Air Transport Management*, *120*, 102655. (IF=4.5, JCR Q1)

[4] Li, Y., Tan, Y., Pu, Y., Zhu, Y., & **Xie, H.*** (2023). Exploring the drivers of green supply chain management in the Chinese electronics industry: Evidence from a GDEMATEL–AISM approach. *Cleaner Logistics and Supply Chain*, *7*, 100110. (IF=6.9, JCR Q1)

[5] Yang, K., Liu, T., Wang, Z., ..., **Xie, H.**, ..., Zhang, K.* (2021). Classifying Drosophila olfactory projection neuron boutons by quantitative analysis of electron microscopic reconstruction. *iScience*, *25*. 104180. (IF=5.0, JCR Q1)

RESEARCH EXPERIENCES

Identifying extreme precipitation using nonequilibrium thermodynamics Sep 2021 - May 2024
Instructor: Prof. Ying Tang, University of Electronic Science and Technology of China

- Developed and applied an integrated framework using the Landau distribution and large deviation theory, resulting in improved modeling of extreme precipitation events across global locations. This approach yielded a 10% to 20% increase in accuracy compared to conventional distributions.
- Applied large deviation theory to compute return times for extreme events and forecast future precipitation scenarios, enabling predictions of events up to 5-10 times beyond average precipitation levels with 95% confidence.
- Strengthened proficiency in advanced statistical methods and data analysis, developed skills in applying complex mathematical models to real-world environmental challenges, and improved my ability to synthesize interdisciplinary approaches for solving critical problems.

A Multi-Criteria Evaluation of Airline Service Quality Sep 2022 - June 2023
Instructor: Prof. Keqiang Li, School of Systems Science, BNU

- Designed an integrated benchmarking model, utilizing MCDM methods to systematically assess and rank airline service performance.

- Compiled a text-mining dataset elucidating multifaceted service attributes and consumer predilections by scrutinizing survey responses from over Internet, manuscripts, and journalistic expositions.
- Performed multivariate analysis, operations research, decision modeling, and insightful interpretation of results.

Examining Drivers of Green Supply Chain Management Sep 2021 - Aug 2022
Instructor: Prof. Zengru Di & Prof. Keqiang Li, School of Systems Science, BNU

- Conducted mixed methods research encompassing literature analysis, qualitative interviews, and mathematical modeling to identify key determinants driving adoption of green supply chains in the electronics industry.
- Developed an original conceptual framework leveraging MCDM techniques to examine interrelationships and prominence of adoption drivers.
- Led comprehensive review of scholarly literature, primary data gathering through stakeholder interviews, advanced statistical analysis, and dissemination of novel findings.

Work Experiences

E-commerce Supply Chains Optimization Project, Sep 2023 – Mar 2024
The Hong Kong Polytechnic University Hong Kong, China
Position: Research Assistant (Advisor: Dr. Yung Po TSANG)

- Led research on DAO barriers in e-commerce supply chains, authored SCI papers and presented research results at international conferences.
- Identified 12 key DAO implementation factors, integrated Bayesian theory and game theory to develop algorithms, and elucidated and visualised the intricate relationships and hierarchies of potential barriers.
- Coordinated a cross-functional team of four researchers, engaged in liaising and consultation with over ten researchers, and enhanced cooperation and coordination capabilities.

Process Identification and Optimization Project, Mentech (002902.SZ) Jul 2023 – Sep 2023
Position: Process and Supply Chain Management Coordinator Dongguan, China

- Leveraged complex networks analysis and predictive modelling techniques to pinpoint process optimization opportunities and formulate risk mitigation strategies.
- Forged collaborative relationships with cross-departmental teams to deploy process enhancements and execute targeted "Project Velocity" to curtail lead times for a specific product by 10% and trim inventory expenses by 5%.
- Constructed intuitive data visualizations and dashboards to lucidly communicate supply chain metrics and trends to executive leadership.

Presentations

12th International Conference on Complex Networks and their Applications, Menton, France Nov 2023
18th China Conference on Complex Networks, Zhuhai, China Nov 2022

Extra Curricular Activities

Bridge Club of Beijing Normal University, BNU Sep 2021 – Aug 2022
Position: President of the Bridge Club

- Managed a team of 20+ members as president of the Bridge Club, fostering collaboration and strategic thinking. Organized over 15 training sessions, improving team cohesion and individual performance.
- Led a 7-member team in the 2022 College Bridge Championship, dedicating 100+ hours to strategic preparation, developing game strategies, and ensuring optimal performance under competitive pressure. Secured 6th place in the provincial competition, marking the club's best performance.
- Coordinated events, including 5+ tournaments and networking activities, to promote the club on campus. Raised club visibility by collaborating with other university clubs, boosting event participation.

Awards

99 YUAN CHUAN Scholarship, BNU (4 / 150) 2023
Academic Scholarships, BNU (50 / 3000) 2023

Competences

Languages Chinese (native), Cantonese (native), English (C1)
Techniques Data analysis in MATLAB & Python, and Word process in LaTeX & Microsoft Office