Yujia Wang

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EDUCATION

Beijing Institute of Technology — Beijing, China
M.Phil., Computer Science (ongoing) | Supervisor: *Prof. Haoran Yu* — 2021 - Present
GPA: 3.70/4.00

Huazhong Agricultural University — Wuhan, China
B.S., Computer Science ***(cum laude)*** | Supervisor: *Prof. Jianxiao Liu* — 2016 - 2020
GPA: 3.47/4.00 | Weighted Average Score: 86/100

National University of Singapore — Kent Ridge, Singapore
Summer Workshop | Supervisor: *Prof. Hon-Wai Leong* — 2019.7 - 2019.8
Personal Grade: $A-$

PUBLICATIONS

*Authors marked with * are my supervisors. Authors marked with # have equal contributions.*

1. **Yujia Wang**, Haoran Yu*. "Predicting human behavior by integrating game theory and machine learning."*AAAI 2024 Under review and awaiting decisions from the final phase.*

2. Liguang Wang#, **Yujia Wang#**, Yi Fu, Yunge Gao, Jiawei Du, Chen Yang, and Jianxiao Liu*. "AFSBN: A method of artificial fish swarm optimizing bayesian network for epistasis detection." *IEEE/ACM Transactions on Computational Biology and Bioinformatics* 18, no. 4 (2019): 1369-1383.

RESEARCH EXPERIENCE

Predicting Human Behavior by Integrating Game Theory and Machine Learning
Location: Beijing Institute of Technology | Role: First Author | Supervisor: Prof. Haoran Yu — 2021.11-Present

- Research Problem: How to predict human behavior in strategic environments accurately?
- Challenge: Current methods are limited in predictive capabilities. Game theory-based models cannot capture all factors influencing human behavior. Machine learning-based approaches suffer from the domain shift problem.
- Solution: Developed a three-stage framework integrating game theory and machine learning to predict human behavior in strategic environments (e.g., auctions).
- Results: This framework outperformed game theory-based approaches and machine learning-based approaches on synthetic and real data even when there exists a large domain shift.

NUS Summer Workshop:
Mining Communities in Big-Data with Algorithms and Computational Thinking
Location: National University of Singapore | Role: Team Leader | Supervisor: Prof. Hon-Wai Leong — 2019.7-2019.8

- Research Problem: What insightful findings could community detection uncover from data?
- Method: Proposed and designed the project of *Depressive Community Detection and Analysis*. Then built a social network of Weibo (China's equivalent of Twitter) users based on text similarity and applied community detection algorithms to it.
- Results: Successfully identified potential "depressive" groups and, notably, uncovered group characteristics. (e.g., possible causes of depression).

AFSBN: A Method of Artificial Fish Swarm Optimizing Bayesian Network for Epistasis Detection
Location: Huazhong Agricultural University | Role: Co-first Author | Supervisor: Prof. Jianxiao Liu 2017.11-2019.11

- Research Problem: How to enhance the detection of a special interaction between genes (i.e., epistasis) in terms of accuracy and efficiency?
- Method: Adapted the Artificial Fish Swarm Algorithm to optimize the Bayesian Network structure.
- Results: Outperformed conventional methods and SOTA methods in simulated data and real AMD data.

INTERNSHIP

Research Institute of Taikang Insurance Group Beijing, China
Data Scientist 2023.8-Present

- Applied machine learning techniques to analyze data on invoices and insurance cases, identifying potential invoice reversals that could lead to insurance fraud. Cleaned data from the Neo4j Database and investigated potential fraud communities.
- Successfully improved prediction accuracy by 3 times compared to previous methods and discovered new characteristics of insurance fraud.

AWARDS AND SCHOLARSHIPS

First-Class Academic Scholarship (2 years in a row) from Beijing Institute of Technology 2022-2023
Freshman Scholarship from Beijing Institute of Technology 2021
Bachelor's Degree with Highest Honors from Huazhong Agricultural University 2020
Merit Student (3 years in a row) from Huazhong Agricultural University 2016-2019
Excellent Student Leader of Huazhong Agricultural University (Top 2%) 2019
Second Prize in the National English Competition for College Students (Top 3%) 2018

TECHNICAL

Languages
English (fluent), Chinese (native).

Programming Skills
Python, Pytorch, R, and SQL.

Research Software and Skills
Git, Visio, and LaTeX