Yufan Chen

21 years old | 2022 Class| communist youth league member |
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Education

2022.09 - now	**NEUQ**	**Computer Science and Technology**	**undergraduate**

- **GPA**: 4.22/5.0 **GPA rank **: 14/191
- **Major courses:** Probability Theory and Mathematical Statistics (100), Discrete Mathematics (99), Data Structures (96), Databases (96), Assembly Language (96), Operating Systems (95)
- **Professional skills:** Proficient in C++(STL container, bloom filtering, multi-threaded programming), proficient in using Java (Spring Boot service framework), and have used Python (NumPy, Pandas, Scikit learn) multiple times for numerical analysis.

Featured Projects

Project One

2023.09 -2024.11	**Subgraph matching based on minimum spanning tree and candidate graph**	**Submitted (under review)**	**Big Data Mining and Bioinformatics Laboratory**

- Participated in a project funded by the National Natural Science Foundation of China, focusing on the NP problem in subgraph matching and researching the optimization of vertex recognition order and node storage to improve matching efficiency.
- Design and implement an efficient subgraph matching algorithm and data structure to solve the problem of high computational complexity and low efficiency in the matching process of traditional methods.

- Propose a vertex matching order optimization method based on Minimum Spanning Tree (MST), which assigns weights to edges to generate the minimum spanning tree, prioritizes matching small weight edges, and filters out false positive matches as early as possible. Design and implement MS and MMC auxiliary data structures, combined with pruning techniques, dynamically apply filtering conditions, and reduce the computational complexity of invalid matches. Finally, DFS traversal is used to generate the tree, combined with non tree edge pruning strategy, to generate all possible matching sequences and ensure the integrity of the matching results.

Project Two

2024.11	**The Development Trends of China's Pet Market and the Impact of International Policies**	**Second Prize in Mathematical Modeling for Asia Pacific University Students**

- The global pet food market presents a regional supply-demand split (China's overcapacity vs. high-end market monopoly in Europe and America), and traditional demand forecasting models ignore policy shocks and cross-border games, resulting in a lack of quantitative basis for companies' overseas strategies.
- Build a decision-making system that integrates market demand forecasting, supply chain game theory, and policy effect evaluation to guide Chinese manufacturers in capacity planning and export strategy optimization.
- Using a mixed forecasting framework, Ridge regression model and time series model were used to predict China's production and foreign pet market demand, respectively. Nash equilibrium theory was introduced to construct a game model of food dumping between China and foreign countries. The optimal sales strategy for pet food in China and abroad was solved through KKT conditions, and the external sales and production volume of pet food in China in the next three years were calculated. Design a DID double difference model to quantify the impact of tariff barriers on export volume, using the 2018 US China trade war as the policy shock point.
- Served as a team code writer, completed the development of core modules for three types of models (prediction/game/DID), and provided strategic analysis tools for the pet food market.

Connect Me

The current status is: in school, graduating in June 2026, and available for employment at any time.

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https://c3f15f6.github.io/about