

# Lei WANG

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## EDUCATION

### Shanghai Jiao Tong University (SJTU)

*B.Sc. in Industrial Engineering, Minor: Finance*

Shanghai, China

*Sept. 2021 - Present*

- GPA: 91.64/100, Ranking: 1/55
- Core Courses: Operations Research, Machine Learning, Stochastic Models, Data Structure, Econometrics.

## RESEARCH INTERESTS

Quantitative Marketing, Large Language Models.

## RESEARCH EXPERIENCE

### Value Attribution for LLM Summaries: Data Shapley Approach

Seattle, WA

*Research Assistant, Advisor: Prof. Zikun Ye*

*May 2024 - Present*

- Proposed a systematic framework using Shapley values to transparently quantify the contribution of each information source in LLM-generated summaries, in the context of SearchGPT.
- Developed a novel Thematic Embedding Clustering algorithm leveraging theme-driven information extraction and embedding similarity, aimed at reducing computational costs in Shapley value calculations.
- Tested the efficiency of our algorithm on a large-scale Amazon review dataset, achieving approximately 50% computational savings at an MAE of 0.15 compared to baseline methods.

### Equitable Hydrogen Technology Community Engagement

Seattle, WA

*Research Assistant, Advisors: Prof. Natalie Mizik and Prof. Zikun Ye*

*May 2024 - Present*

- Collected and analyzed one million posts on hydrogen energy from Reddit and Twitter, conducted sentiment classification using LLMs, and applied theme-driven topic modeling with BERTopic.
- Developed a preliminary pipeline using machine learning methods to identify disadvantaged groups, promoting equity within social media communities.

### Sentiment Explorational Analysis Based on Movie Reviews

Shanghai, China

*Project Leader, Advisor: Prof. Chengzhang Li*

*Apr. 2024 - Jun. 2024*

- Compared sentiment analysis models using both dictionary-based methods and word embedding techniques.
- Identified potential manipulation in movie ratings through statistical tests (t-tests) and clustering (K-means), providing insights into self-boosting behaviors.
- Designed and implemented a user-friendly movie search engine, allowing users to perform open-ended sentiment-based searches to enhance user experience and engagement.

## EXTRACURRICULAR ACTIVITIES

### Scholars and Achievers Club of SJTU

Shanghai, China

*Member - Led and organized academic lectures and peer mentoring in SJTU.*

*Jun. 2023 - Present*

### Ernst & Young (EY) Advisory Limited

Shanghai, China

*Intern - Supported financial data analysis and helped prepare investment research reports.*

*Aug. 2023 - Sept. 2023*

## AWARDS & HONORS

National Scholarship of China (Top 0.2% nationwide)

*2022-2023*

Finalist Award, COMAP's Mathematical Contest in Modeling (Top 1% worldwide)

*2023*

First Prize, Toyota Boshoku Scholarship (Top 2% of SJTU)

*2021-2022*

## SKILLS

**Programming:** Python, C++, L<sup>A</sup>T<sub>E</sub>X, Stata, Minitab

**Languages:** Fluent in English, Native in Mandarin