

# 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: 91.58/100, Ranking: 1/55
- Core Courses: Operations Research, Machine Learning, Stochastic Models, Data Structure, Econometrics.

## RESEARCH INTERESTS

Quantitative Marketing, Large Language Models.

## RESEARCH EXPERIENCE

### Towards Transparent Source Attribution in Generative LLMs

*Research Assistant, Advisor: Prof. Zikun Ye and Prof. Hema Yoganarasimhan*

Seattle, WA

*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 overhead in Shapley value calculations.
- Utilized a large-scale dataset of Amazon product reviews (571.54 million reviews across 48.19 million products) to model LLM-based summarization workflows and test the robustness of the proposed methods.

### Equitable Hydrogen Technology Community Engagement

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

Seattle, WA

*May 2024 - Present*

- Collected and analyzed tweets about hydrogen energy using the Twitter API, then performed sentiment classification with LLMs after preprocessing, followed by theme-driven topic modeling with BERTopic.
- Proposed methods to identify disadvantaged groups through social media analysis by tracking engagement with social welfare organizations and developing a classification model utilizing geographic data.

### Sentiment Explorational Analysis Based on DOUBAN Movie Reviews

*Project Leader, Advisor: Prof. Chengzhang Li*

Shanghai, China

*Apr. 2024 - Jun. 2024*

- Developed and evaluated sentiment analysis models using both traditional dictionary-based methods and advanced word embedding techniques, benchmarking against Baidu's open-source Senta model.
- 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

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

Shanghai, China

*Jun. 2023 - Present*

### Ernst & Young (EY) Advisory Limited

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

Shanghai, China

*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,  $\text{\LaTeX}$ , Stata, Minitab

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