

Shisen Yue

✉ Email | 🌐 Personal Website | 🐙 Github

EDUCATION

Shanghai Jiao Tong University

Shanghai, CN

Bachelor of Arts in Linguistics; GPA: 88.4/100

Sept. 2020 - June 2024 (expected)

- Honors: Academic Progress Award (Top 10%)
- Relevant Courses:
 - * Linguistics: Syntax (97/100), Semantics (91/100), Phonetics and Phonology (90/100)
 - * Computer Science: Algorithm (97/100), Data Structure (88/100), Machine Learning (89/100)
 - * Math: Probability and Statistics (97/100), Calculus (96/100)

PUBLICATIONS

Byung-Doh Oh, **Shisen Yue**, William Schuler. (2023). Frequency Explains the Inverse Correlation of Large Language Models' Size, Training Data Amount, and Surprisal's Fit to Reading Times. *Association of Computational Linguistics* (Under Review)

Yikang Liu, Ziyin Zhang.[†], Wanyang Zhang[†], **Shisen Yue**[†], Xiaojing Zhao[†], Xinyuan Cheng, Yiwen Zhang, Hai Hu. (2023). ArguGPT: evaluating, understanding and identifying argumentative essays generated by GPT models. *Computational Linguistics* (Under Review)

Yixin Wang, **Shisen Yue**, Yanyi Zhong. (2023). Understanding differences between human language processing and natural language processing by the synchronized model. *International Conference on Education, Language and Art (ICELA 2021)*, 287-294

RESEARCH EXPERIENCE

Large Language Models (LLMs) and Gricean Conversational Implicature

Department of Linguistics, Shanghai Jiao Tong University (Capstone)

9/2023 – Present

Supervisor: Prof. Hai Hu

Shanghai, CN

- Introduced the task set *SwordsmanQ* that evaluate LLMs understanding of conversational implicatures
- Found human-level pragmatic inference skills on gpt-4 (90% in accuracy, greatly outdoes other LLMs)
- Evaluated LLMs with pragmatic tasks, analyzed the results with Gricean Cooperative Principle

Revealing Sentence Ambiguity Effects with Left Corner Parsing

Department of Linguistics, Ohio State University

4/2023 – Present

Supervisor: Prof. William Schuler

Remote

- Simulated sentence parsing with a left corner parser modeled on distributed associative memory
- Refactored the code to reveal the parallel parsing of sentences that contain local ambiguity
- Revealed the production of ambiguity by manipulating grammar rules, yielded a highly significant result ($p < 0.01$)

Analyzing and Identifying Essays Generated by GPT Models

Department of Linguistics, Shanghai Jiao Tong University

2/2023 – 7/2023

Supervisor: Prof. Hai Hu

Shanghai, CN

- Evaluated linguistic metrics in essays written by AI and human, transformed into matrices for training
- Developed AIGC detector with Support Vector Machine (SVM), attained an accuracy of 95.14%

Perception of Event Boundaries Among Chinese Speakers

Department of Linguistics, Shanghai Jiao Tong University

7/2022 – 3/2023

Supervisor: Prof. Hui Chang

Shanghai, CN

- Led multi-modal (video based) study to test the undeveloped and regressed production and comprehension of aspect markers (-le and -zhe in Chinese) among children and the elderly
- Observed significant immaturity/attrition ($p < 0.05$) in these age groups compared to young adults
- Designed a video segmentation task to probe into event boundaries in Chinese speakers' cognition
- Revealed hierarchical event perception among Chinese young adults, supporting universality of cognition

AI-Chatbot Discourse Analysis

7/2021 – 1/2022

Department of Linguistics, Shanghai Jiao Tong University

Remote

- Surveyed 115 AI-Chatbot users for feedback on grammatical acceptability and discourse coherence
- Evaluated the responses of Chatbot Replika with a comprehensive synchronized model of language
- Reported its limitation in contextualizing information and understanding pragmatic implicature

COURSE PROJECTS

Reinforcement Learning with MuJoCo Simulators and Atari Games

6/2023

CS-3316 Reinforcement Learning, Shanghai Jiao Tong University, [Github]

Shanghai, CN

- Trained MuJoCo simulators with policy-based algorithms DDPG and TD3 and Atari agents with value-based algorithms DQN and Dueling DDQN, enhanced agents' performance through epsilon decay and clipping gradient, attained scores more than 10% higher than benchmarks provided by OpenAI

Movie Tagging with LDA Model

9/2022

UCLAX-CSX4501 Machine Learning, UCLA Extension, [Github]

Remote

- Preprocessed the data with Natural Language Toolkit (NLTK) package, made corpus with words from movie descriptions, extracted topic words by the Latent Dirichlet Allocation (LDA) model

VOLUNTARY & EXTRACURRICULAR EXPERIENCE

Head of Contact Center, School Students Union

9/2021 – 4/2022

- Responsible for fundraising for large events held by the student union, liaising with business leaders.
- Coordinated with student unions of other colleges to organize large-scale inter-college activities.

Volunteer Teacher, Community Outreach Program

7/2021 – 8/2021

- Delivered classes to children from elementary schools in the remote area of China

SKILLS

Programming: Python, C++, \LaTeX , R, Huggingface, Praat, SPSS, E-Prime

Libraries: Natural Language Toolkit (NLTK), PyTorch, Pandas, Numpy, scikit-learn

Language Skills: Mandarin (native), English (proficient), Spanish (DELE B1), Japanese (intermediate)