Jiayu Liang

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Education

Shandong University [2020 – 2024]
Bachelor of Arts in English Language and Literature *88.71/100 Average Grade*

Relevant Courses
English Phonetics (96), Phonetics and Brain Science (Excellent), Experimental Phonetics (92), Experimental Methods and the Application of Instruments in Phonetics (95), Cognitive Neuroscience Experiment (90), Corpus Linguistics (93), Python and Natural Language Processing (94)

Work Experience

The Hong Kong University of Science and Technology [2024 – 2025]
Research Assistant

Research Interests

- Production and Perception of Non-native Language
- Cross-domain Transfer Effects between Music and Language Experience
- Age-related Differences in Language Learning

Publications & Presentations

- **Liang, J.**, Zhang, H. Effects of Mandarin Speakers' Musical Aptitude on the Perception of English Vowels: An Eye-tracking Study. (in preparation)
- **Liang, J.**, Zhang, H. Mandarin-speaking Musicians Show Enhanced Perception-Production Link of L2 English Vowels. (in preparation)
- Zhang, H., **Liang, J.** (co-first author). Benefits of Melodic Training on the Production and Perception of Cantonese Level Tones by Korean and Chinese Older Adults. (in preparation)
- **Liang, J.**, Zhang, H. (2023). Perception-Production Links in Mandarin Speakers' English Vowels: A Behavioral and Eye-tracking Study. In *The 2nd National Symposium on Clinical Linguistics (NSCL2023)*, Jinan, Shandong. (oral presentation)
- **Liang, J.**, Jia, B., Liu, J., Li, X., Zhang, H. (2023). Music Experience Enhances Categorical Perception of English Vowels in Mandarin Speakers. In *The 14th International Conference in Evolutionary Linguistics (CIEL2023)*, Hong Kong. (poster)
- **Liang, J.**, Jia, B., Liu, J., Li, X., Zhang, H. (2023). Music Experience Enhances Categorical Perception of English Vowels in Mandarin Speakers. In *The 15th Phonetic Conference of China (PCC2023)*, Shenzhen, Guangdong. (oral presentation)

Research Experience

Benefits of Melodic Training on the Production and Perception of Cantonese Level Tones by Korean and Chinese Older Adults
Individual Project [*Nov*.2023 – *Jun*.2024]

- Conducted comprehensive literature review.
- Developed and implemented a Melodic Height Identification Training program and associated assessments (identification and discrimination tests), utilizing JavaScript (jsPsych).
- Recruited 30 participants, including 15 Korean and 15 Chinese older adults.

- Employed SPPAS and Montreal Forced Aligner for automatic annotation of production data, and MATLAB (VoiceSauce) for automatic extraction of F0 values.
- Analyzed participants' tone differentiability and hit rate to evaluate production performance and generated tone overlap plots.
- Transformed perception data (accuracy percentages) into rationalized arcsine units (RAUs) for statistical analysis.
- Conducted Linear Mixed Effects (LME) analysis using R (lme4) to examine the effects of melodic training on Cantonese level tones perception and production.

Perception-Production Links in Mandarin Speakers' English Vowels: A Behavioral and Eye-tracking Study
Undergraduate Thesis [*Sep.*2023 – *Jun.*2024]

- Conducted thorough literature review.
- Synthesized and manipulated experimental stimuli using MATLAB (TANDEM-STRAIGHT).
- Designed eye-tracking experiments with Experiment Builder.
- Recruited 60 college students for participation.
- Employed automatic annotation for production data using SPPAS and DARLA, and automatic extraction of F1 and F2 values in MATLAB (VoiceSauce).
- Calculated participants' boundary width in Python to assess perception performance.
- Processed eye-movement data in R (eyetrackingR) and calculated the difference between the empirical log-transformed proportions of target and competitor fixations.
- Calculated participants' Pillai score in R to measure vowel overlap and plotted vowel overlap using F1 and F2 values in R (ggplot2).
- Conducted LME and Growth Curve Analysis (GCA) in R (lme4).

Music Experience Enhances Categorical Perception of English Vowels in Mandarin Speakers
Group Project [*Mar.*2023 – *Jun.*2023]

- Conducted literature review, synthesized and manipulated experimental stimuli using MATLAB (TANDEM-STRAIGHT).
- Recruited 24 college students for participation.
- Designed and executed experiments in Psychopy.
- Performed ANOVA and Pearson correlation analysis in Python (Pandas).
- Wrote the manuscript.

Awards

- College Students' Innovative and Entrepreneurial Training Program Funding Supported by Shandong University [*Jun.*2023 – *Jun.*2024]
- The Third-Class Undergraduate Academic Scholarship [*Sep.*2021]

Skills

Programming: Python, R, JavaScript and MATLAB
Language proficiency: Mandarin (native), Cantonese (native) and English (IELTS score: 8.0)