CHUQIAO SONG

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EDUCATION

Basque Center for Cognition, Brain and Language   *September 2025 - September 2026*
MSc in Cognitive Neuroscience of Language
Relevant coursework: Computational Neuroscience, Methods in Cognitive Neuroscience, Neuroanatomy

Fudan University(ranked 30 in QS)   *September 2021 - July 2025*
Bachelor of Arts in Spanish Language and Literature (minor in Neurolinguistics)   Overall GPA: 3.67/4
Relevant coursework: Advanced Spanish, Introduction to Brain Sciences, Semantics, Syntax, Phonology,
Natural Language Processing, Mathematical Analysis, Linear Algebra, Regression Analysis

ACADEMIC ACHIEVEMENTS

Publications

· Chen, H., Cheng, Y., & **Song, C**. (2025). A study on the sentiment analysis and dissemination of the Spanish translation of The Communist Manifesto. Fudan Journal of Foreign Languages and Literature, (1), 12–23. (CSSCI Index)

· **Song, C.**, Chen, H., Gao, F., & Qian, H. (resubmitted after third round of minor revisions). *L2 conditionally facilitates L3 word recognition among Chinese-English-Spanish trilinguals. International Journal of Multilingualism.* (IF: 2.0, ranked 25/149, Q1, in Language & Linguistics, 2024 JCR)

· **Song, C.**, Cai, X., & Chen, S. (under review). *Sentiment analysis of Spanish political party tweets using pre-trained models: A study on sentiment inclinations and social media strategies. Data Mining and Knowledge Discovry.* (IF: 4.3, ranked 73.9%, Q1, in Computer Science, Information Systems, 2024 JCR)

Conferences

· Song, C.,(2025). Sentiment analysis of Spanish political party tweets using pre-trained models. 7th International Conference of Psycholinguistics in China, Dalian, China

· Song, C., Chen, H. (2024). Orthographic and Semantic Priming in Trilingual Word Recognition: The Role of L2 English in L3 Spanish Processing for L1 Chinese Learners. In Proceedings of the 8th National Conference on Second Language Processing, Hangzhou, China.

RESEARCH INTERESTS

Bilingualism, Cognitive Sciences, Machine Learning, Child Language, Natural Language Processing

RESEARCH EXPERIENCE

Recurrent Neural Network Modeling of Predictive Coding in Human Inferior Colliculus and Medial Geniculate Body
Master's thesis, advised by Prof. Alejandro Tabas   *Oct 2025 – Present*

· Implemented GRU-based sequence models to decode deviant position (4/5/6) from 8-tone auditory sequences following Tabas et al. (2020).

· Treated GRU hidden-state dynamics as a model neural population and constructed condition-wise regressors for voxel-wise encoding of 7T fMRI BOLD responses in human inferior colliculus (IC) and Medial Geniculate Body (MGB).

· Extended the original habituation vs. predictive-coding Bayesian model comparison by introducing the RNN as a third, mechanistic model and evaluating voxel-wise model evidence in subcortical auditory nuclei.

Investigating the Awareness of Orthographic, Semantic and Phonological Feb 2024 – July 2024
Information in Chinese Radicals of CFL Students
Advised by Prof. Yu-Fu Chien *Fudan University, Shanghai*

· Designed and conducted two novel character judgment tasks. Managed the setup using PsychoPy and oversaw data collection from 55 non-native speakers.
· Analyzed response times and accuracy data using mixed-effects models to deepen understanding of language processing in intermediate learners.
· Authored and presented findings at debate defense, won Honors Research Award at Fudan University.

Spanish Computational Linguistics Lab Jan. 2024 – Present
Core Member *Fudan University, Shanghai*

· Fine-tuned BERT and RoBERTa models on a 200,000 labeled Spanish sentiment dataset using SGD optimizer.
· Analyzed 100,000+ Spanish tweets, categorizing them into three sentiment classes and identifying party-specific sentiment differences using statistical tests.
· Modeled sentiment across 20 Spanish literary translations, contributing to a 30-page manuscript.

Mental Lexicon in Bilingual and Multilingual Studies Apr. 2023 – Present
Advised by Prof. Hao Chen *Fudan University, Shanghai*

· Designed and executed 3 studies on trilingual word recognition, focusing on cognate facilitation and orthographic-semantic cues.
· Managed experimental materials and collaborated with partner universities to collect data from 90 participants.
· Analyzed reaction time and accuracy data in R using mixed-effects models and Bayesian inference, contributing to a 30-page manuscript.

WORK EXPERIENCE

Hong Kong Polytechnic University July 2024 - Present
Research Assistant *Supervised by Prof. Angel Chan*

· Helped improve a command line program called Batchalign to automate the generation of CHAT transcripts from audio input for Cantonese-speaking population.
· Fine-tuned bert-base-chinese to develop punctuation restoration model using focal loss, improved accuracy of utterance segmentation of Cantonese child speech to 88%.
· Assisted in analyzing model performance and refining training datasets, contributing to ongoing research on ASR effectiveness for non-standard speech patterns.

Sinofaith IP Group Sep. 2023 - Dec. 2023
Research Assistant

· Helped develop an AI-powered Retrieval-Augmented Generation (RAG) system using LangChain and Weaviate, integrating a vector database of legal proposals to enable context-aware retrieval and generation.
· Optimized LLM-based proposal synthesis through prompt chaining and similarity search tuning, demonstrating the system's effectiveness for automated legal document drafting and AI-assisted contract generation.
· Built a legal clause search chatbot using Weaviate and LangChain APIs, improving precise legal information retrieval for over 100 internal users.

AWARDS & HONORS

Fudan University Scholarships 2022, 2023

· Merit-based award; conferred to the **top 20%** of the cohort.

"FLTRP Cup" National English Speaking Contest (Fudan Division) 2021

· **1st Place** among **500+** contestants across **two rounds** from **three** universities.

- Rounds: prepared speech, *spontaneous* (impromptu) speech, and Q&A.
- Advanced to provincial level; event canceled due to COVID–19.

Xiyuan Scholars Research Award   2024
- Departmental, merit-based research grant (10,000).
- Received **top-tier** evaluation; **2** awardees selected from **20+** departmental projects ($\approx$10%).
- First author on a paper nearing acceptance in the *International Journal of Multilingualism.*

"Qie Wen Jin Si" Interdisciplinary Research Competition   *June. 2024*
- Merit-based research grant spanning **6** disciplines; **15/200+** projects funded ($\sim$7% acceptance).
- Sole recipient from **Chinese Language & Literature** among **30+** submissions in the discipline.

CO-CURRICULAR ACTIVITIES, COMMUNITY SERVICES & LEADERSHIP

Audio Book Creation for Kids with Visual Impairement   Sep. 2021 - Nov. 2022
- Authored scripts tailored to the age and comprehension level of visually impaired children, providing audible reading of traditional Chinese fable stories
- Engaged in online companionship with visually impaired children, reading to them and answering queries.

Peer Tutor in Statistics and R   Nov. 2024
- Delivered a 3hrs+ intensive workshop for 20+ peers on applied statistics and R programming.
- Prepared and taught core topics including t-tests, ANOVA, and linear mixed-effects models using practical research datasets.
- Guided classmates in producing publication-quality plots in R (e.g., ggplot2) and interpreting key statistical outputs, while modelling good practices for reproducible analysis.

Fudan University Rural Education Outreach Program   June 2022 – August 2022
- Led the creation and delivery of 1.5-hour video lessons introducing Spanish culture to children in rural villages in Nanjing, part of the Educational Support Program.
- Designed and developed engaging, culturally enriching curricula, which were delivered through video content, reaching over 100 children
- coordinated a team of volunteers to ensure smooth execution, ensuring they understood the program's educational goals.

Fudan Ballroom Association   March 2022 – July 2024
Associate Head
- Led a team of 10+ members by assigning responsibilities, providing mentoring, and conducting weekly progress meetings to ensure tasks were on track.
- Spearheaded the organization of multiple ballroom dance events, including the annual ballroom dance prom, by managing the venue, securing sponsors, developing a comprehensive rehearsal schedule and selecting performances, which involved collaborating with choreographers and dancers to ensure seamless event execution.
- Successfully organized the annual ballroom dance prom with 200+ participants from 15+ countries, fostering cross-cultural engagement and increasing the association's visibility on campus.

OTHER STRENGTHS

Programming Languages	Python, R, SQL, MATLAB
Software & Tools	SPM, PsychoPy, PyTorch, LaTeX, SPSS, Microsoft Suite
Language Skills	Mandarin (native), Cantonese (native), English (TOEFL: 109/120; Listening: 30/30, Reading: 29/30, Writing: 27/30, Speaking: 23/30), Spanish (TEM-8, equivalent to C2), Basque (Beginner)