# JIAN XIANG
RESEARCH STUDENT

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## SUMMARY

While my undergraduate studies focused on Japanese, I see myself beyond the confines of a literary enthusiast or cultural scholar. Instead, I identify as an inter-disciplinary individual, possessing the requisite qualities and skills in science and mathematics. I firmly believe in the unprecedentedly formidable power of language, particularly in the context of the rapid advancements in artificial intelligence (AI) and brain sciences. My goal is to harness and optimise the strength of language through innovative strategies, such as signal processing, machine learning, and neuroimaging. My interests also encompass the study of the human mind and cognitive mechanisms in both humans and AI, approached through both technical lenses and psychological perspectives.

## EDUCATION

**MRes in Speech, Language and Cognition** with **Distinction**　　Sept. 2022 - Sept. 2023

University College London, *London, United Kingdom*

- Main Research Project: **Multi-lingual Speech Emotion Recognition** scored **85%**.
- Involved Components: Speech and Language Processing, Statistics, Designing and Analysing fMRI Experiments, Research Skills and Methods, Theories regarding language-related Neuroscience and Neurology.

**BA in Japanese** with **91.12%**　　Sept. 2018 - Jun. 2022

Zhongnan University of Economics and Law, *Hubei, People's Republic of China*

- Explanation for Academic Performance: For most UK universities, a score exceeding 90% from my undergraduate university is regarded as equivalent to $1^{st}$ **Class Honours**.
- Involved Components: Japanese Linguistics and Literature, Basis of Computing, Technology and Application of Database, Probability Theory and Mathematical Statistics.

## RESEARCH EXPERIENCE

**MRes Project: Multi-lingual Speech Emotion Recognition**　　Apr. 2023 - Sept. 2023

- Innovated with Transfer Learning and the advanced XLSR deep learning model for cross-linguistic feature extraction, moving beyond traditional methods.
- Independently funded computational resources and autonomously navigated and implemented research methodologies, with the exception of using mandatory datasets as specified by the project supervisor.

**fMRI Module Project: Neural Activities in Visual Search Efficiency**　　Feb. 2023 - May. 2023

- Designed and conducted experiments; collaborated in results analysis and discussion with the research team.
- Utilised Matlab for programming experimental paradigms, R for behavioural data analysis, and Statistical Parametric Mapping (SPM) for fMRI imaging data analysis.

**General Research Skills:**

- Proficient in literature reviews, experimental design, critical analysis, and quantitative methods.
- Effective in both teamwork and independent research.
- Eager to learn and apply state-of-the-art techniques and theories.

## SKILLS & KEY MODULES UNDERTAKEN

(From university curricula, external training and testing, and self-study)

**Mathematics**

- Calculus; Probability; Linear Algebra; Basics of Statistics; Application of Statistics (Correlation, Regression, ANOVA) with R and Python; Principal Component Analysis; Artificial Neural Networks.

**Computing**

- Theoretical & Technical Foundations: Data Structure and Algorithms with C language; Principles and Technology of Database with SQL; Principles of Operating System (Theory); Principles of Computer Components (Theory); Machine Learning with Python.
- Programming Languages: C, Python, R, SQL; some experience with Matlab.

**Languages and Linguistics**

- Language Proficiency: Chinese (Native, 1B in Mandarin - Top Level in Provincial Examination), English (C1 with IELTS 7.5), Japanese (C1 with JLPT N1), German (B2 with Goethe Certificate B2).

- Theoretical Frameworks: Linguistics of Chinese, Japanese, English, and German; Neuro- and Psycho-linguistics.

**Psychology**
- Psychological Statistics with R; Neuroimaging with fMRI; Educational Psychology for High School Teaching.

**Tools**
- Programming: Jupyter, RStudio, PyCharm, VSCode; Anaconda.
- LaTeX: TeXStudio, Overleaf
- Office Tools: Microsoft Office (Word, Excel, Powerpoint, Access), KeyNote.

**Teaching**
- Certified high school Japanese teaching qualification, also with some English teaching experience (in China).

# ACHIEVEMENTS & CERTIFICATIONS

**Academic**

- 2023: MRes Speech, Language and Cognition Project Prize (awarded to **outstanding** research project).
- 2020: Received **offers for bachelor's study** from Ludwig Maximilian University of Munich, Karlsruhe Institute of Technology, and Free University of Berlin but declined due to travel restrictions.
- 2020: Awarded the First-Class Scholarship at the university level.
- 2019: Awarded the title of 'Merit Student' at the university level.
- 2019: Awarded the **China National Scholarship** (awarded to only 2 recipients per grade in our school, the highest award for Chinese university students).
- 2018: Scored **147** out of 150 in Mathematics in the Gaokao (Chinese College Entrance Examination).

**Professional**

- 2022: Completed Mathematics for Machine Learning Specialisation certificate on Coursera.
- 2022: Scored 168 out of 170 in GRE Quantitative Reasoning.
- 2022: Obtained the (China) National Computer Rank Examination (NCRE) Level 4 Certificate in Principles of Database.
- 2021: Obtained the NCRE Level 3 Certificate in Database Technology.
- 2021: Passed the (China) National Teacher Certification Examination for Primary and Secondary School Teacher (Teaching Qualification for High-School Japanese).
- 2021: Achieved Japanese-Language Proficiency Test (JLPT) Level N1 for Japanese proficiency.
- 2019: Obtained the NCRE Level 2 Certificate in C Language with Distinction.
- 2019: Obtained the NCRE Level 1 Certificate in Basis of Computer & Microsoft Office with full mark.
- 2019: Obtained the Goethe Certificate for German Proficiency.

# EXTRA-CURRICULAR ACTIVITIES & LEADERSHIP

**Assistant of Administration and Coordination** | School of Foreign Studies, Zhongnan University of Economics and Law                                                                     Sept. 2019 - Jun. 2021
- Provided administrative support to faculty and leadership.
- Mediated conflicts and facilitated harmonious interactions among faculty, students, and school authorities.
- Organised and implemented a variety of educational and social events.

**Class Publicity Member** | Class 1802 in Japanese, School of Foreign Studies, Zhongnan University of Economics and Law                                                                     Sept. 2019 - Jun. 2021

- Devised and promoted class events by leveraging social media.
- Oversaw class communications and facilitated feedback collection to benefit faculty and students.

# WORKING EXPERIENCE

**Assistant** | Yichang Museum, *Yichang, Hubei, China*                      Jul. 2021 - Aug. 2021; Jan. 2022 - Feb. 2022
- Provided support to museum staff in visitor reception and guidance, as well as in the organisation of materials and activities.
- Delivered multi-lingual interpretations of artefacts and historical narratives to visitors.