

YINGJIA WAN

✉ yingjiawan.alisa@gmail.com | 🌐 <https://yingjia.one/> | 📱 Yingjia-Wan

Education

University of Cambridge, UK 2024

M.Phil in Theoretical and Applied Linguistics (Topic: Computational Linguistics/Natural Language Processing)

Supervisor: Ivan Vulić

Graduated with merit. Dissertation in multi-modal prompt-tuning for cognition-enhanced NLP.

University of Macau, Macao SAR 2021

B.A. Honours in English Studies

Supervisor: Matthew Wallace

GPA: 3.76/4.0 (Ranked 1st/45). Valedictorian for the Undergraduate Class of 2021.

University of Michigan, USA 2020

Funded Exchange at the Faculty of LSA

GPA: 3.94/4.0. Modules in computer science and semantics, etc.

Internship

Dept. of Computer Science & Engineering, HKUST March 2024 - Present

Research Assistant in LLM Reasoning & Automated Theorem Proving

Mentor: Prof. Sung Kim

- **Work:** Developing LLM-based theorem provers in formal mathematical languages by tapping LLMs' reasoning capability.

Research Experience

Language Technology Lab, University of Cambridge Feb 2023 - July 2023

Master's Dissertation

Supervisor: Dr. Ivan Vulić

- **Topic:** "Multimodal Prompt-Tuning with Cognition Data"
- **Work:** Designed and implemented a multimodal mapping and training scheme to integrate human cognition signals (i.e., eye-tracking and EEG data) as additional prompts into language models. The work explores enhancing model performances robustly by introducing a new modality of datasets as prompts, which indirectly probes LM's inherent linguistic knowledge.
- **Result:** Work in progress for conference submission.

Language Technology Lab, University of Cambridge Dec 2022 - Jan 2023

Student Project

Supervisor: Prof. Anna Korhonen

- **Topic:** "Interpreting BERT Attention from its Approximability to Human Sentence Processing Across Languages"
- **Work:** Conducted a multi-lingual assessment on the alignment of word importance in BERT interpreted by different metrics (e.g., first-layer and last-layer attention, gradient-based saliency) vs. word importance in humans represented by eye-tracking data reading the same language input.

Department of Applied Linguistics, University of Macau Aug 2020-Dec 2022

Undergraduate Thesis

Supervisor: Prof. Matthew Wallace

- **Topic:** "Eye Movements in Reading-Only vs. Reading-While-Listening across Second Language Proficiencies"
- **Work:** Proposed and empirically investigated a theoretical model on the altering effect of auditory-textual synchrony on bilinguals' reading behavior to be mediated by their vocabulary sizes, based on a multimodal eye-tracking experiment.

- **Result:** Presented at AsiaTEFL 2022 and the LELPG Conference at the University of Edinburgh, 2023.

Department of Psychology, University of Michigan, Ann Arbor, USA

Apr 2020- Aug 2021

Research Assistant

Leader: Prof. Kevin Miller

- **Topic:** “Experiences and Perspectives during COVID-19 at Universities in USA and China”
- **Work:** Assisted with questionnaire item design and demographic variables, liaised with Prof. Chi at the University of Macau to initiate a collaboration for joint cross-cultural research.
- **Result:** Presented at the Annual Meetings of AERA (American Educational Research Association) 2022.

Centre for Cognition and Brain Science, University of Macau

Apr 2018- Nov 2020

Research Assistant

Advisor: Prof. Peilian Chi

- **Topic:** Applying NLP in Developmental Psychology
- **Work:** (1) Assisted in corpus collection & annotation.
(2) Trained and analysed an LSTM that classifies socio-psychological attributes (e.g., socio-economic status, growth/fixed mindset, etc.) from the annotated corpus.
(3) Covariate analysis on the linguistic attributes in the corpus.

Publications

Conferences:

- **Wan, Y.**, Wallace, M. (2022) “The Differing Effects of Accompanying Audio in Reading-While-Listening on Chinese EFL learners across Language Proficiencies”. *In AsiaTEFL 2022*.
- Stilwell, S., Narwani, A., Pelton, J., Zhang, X., Zeng Q., Zhao, Q., **Wan, Y.**, Miller, K. (2022) “Pedagogy in a Pandemic: College Instructor Perspectives on Online Instruction during COVID-19 at Universities in USA and China”. *In Annual Meetings of AERA (American Educational Research Association) 2022*.

Working Papers:

- Y. Wan., H. Zhou., I. Vulić. “Multimodal Prompt-Tuning with Human Cognition Data”.
- (Authors list unconfirmed). “A Meta-Reasoning Benchmark for Large Language Models”

Awards

2021	Undergraduate Valedictorian, University of Macau
2021	Macao Foundation Academic Scholarship (equivalent of £1,000), Fundação Macau
2017-21	Dean’s List, Faculty of Arts and Humanities, University of Macau
2017-21	Full Tuition & Accommodation Waiver Scholarship, Honours College, University of Macau
2019	Semi-finalist of the 'Asia Debate Open' Tournament
2018	Best Speaker Prize in the Greater Bay Area Debate Championship
2018	Best Delegate Prize in the Macau Model European Union 2018

Skills

Languages	Mandarin, English, Cantonese (Elementary), Japanese (Elementary)
Programming	Python, C++
Analytical	R, SPSS, MATLAB