

# YINGJIA WAN

Murray Edwards College, University of Cambridge, UK

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## Education

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**University of Cambridge, UK** 2022- 2023

MPhil in Theoretical and Applied Linguistics (topic: Natural Language Processing). Supervisor: Ivan Vulić.

Master thesis in multi-modal prompt-tuning.

**University of Macau, Macao SAR** 2017- 2021

B.A. (Honours) in English. GPA: 3.76/4.0 (Ranked 1<sup>st</sup>/45). Supervisor: Matthew Wallace.

Minor in Computer Science; Graduated as Valedictorian for the class of 2021.

**University of Michigan, USA** 2020

Funded Exchange. GPA: 3.94/4.0. Joined Prof Kevin Miller's covid-19 social research lab.

Modules in programming (C++ & Python), semantics, psychology, etc.

## Research Experience

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**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 corpus collected from participants reading the LM training samples) as additional prompts into state-of-the-art language models. The work explores enhancing LM task performances robustly by introducing a newly expanding type of cross-modal datasets.
- **result:** Work in progress for publication.

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

Student Project (Short Essay)

*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 between BERT (and multilingual BERT) attention interpreted by different metrics (e.g., first-layer and last-layer attention, gradient-based saliency) and human attention 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 text dataset collection and administered the annotation cycle.  
(2) Trained an LSTM that learns to classify demographic categories in psychology (e.g., socio-economic status, growth/fixed mindset, etc.) based on the annotated corpus.  
(3) Correlational and covariate analysis on the linguistic attributes in the text data.
- **result:** The work contributes to a paper in developmental psychology on adolescents' growth mindsets.

## Work Experience

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### Education Counsellor, Kings College London, UK

July – Sep 2023

- Prepared and delivered tailored lesson plans, assisted with course administration and excursion organization in the Bucksmore International Summer School programme at KCL.

### UX design Intern, Akulaku App, China/Indonesia

July - Sep 2021

- Website development and content design for the English version of the App.

### Co-convenor of “The Greater Bay Area Debate Championship”, Macao

Jan - April 2019

- Event planning, publicity promotion, and partnerships with commercial sponsors and government entities.
- Invited globally renowned debaters from Stanford, Harvard, Oxford, etc. as chair adjudicators (e.g., economist Harish Natarajan, the world debate champion known as the 'human debater who defeats AI' as he defeated the IBM robot debater in 2019).

## Publications

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### 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”.

## Academic Awards

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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

## Extracurricular Awards

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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

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Languages	Mandarin, English, Cantonese (Elementary), Japanese (Elementary)
Programming	C++, Python (Familiar with PyTorch and Tensorflow), SQL
Analytical	R, SPSS, MATLAB