

Yuwei (Evelyn) Zhang

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EDUCATION

University of Cambridge

Cambridge, UK

PhD in Computer Science, supervised by Prof. Cecilia Mascolo

2023 – 2027 (expected)

- Current research on generalizable and multimodal deep learning models for respiratory health
- Jointly funded by Nokia Corporation and Cambridge Trust

MPhil in Advanced Computer Science, supervised by Prof. Cecilia Mascolo

2022 – 2023

- Graduated with distinction and awarded the **Examiners' Prize** for a Highly Commended MPhil Project
- Funded by Chiang Chen Overseas Fellowship

Fudan University

Shanghai, China

BSc in Computer Science

2018 – 2022

- Graduated with distinction (Major GPA: **3.9/4.0**, School Rank:**2/153**)

SELECTED PUBLICATIONS

(# denotes Co-First author)

1. Towards Open Respiratory Acoustic Foundation Models: Pretraining and Benchmarking.
Yuwei Zhang[#], Tong Xia[#], Jing Han, Yu Yvonne Wu, Georgios Rizos, Yang Liu, Mohammed Mosuily, Jagmohan Chauhan, Cecilia Mascolo.
To appear: *Advances in Neural Information Processing Systems (NeurIPS D&B 2024)*.
2. RespLLM: Unifying Audio and Text with Multimodal LLMs for Generalized Respiratory Health Prediction.
Yuwei Zhang, Tong Xia, Aaqib Saeed, Cecilia Mascolo.
Under Review.
3. Uncertainty Quantification in Federated Learning for Heterogeneous Health Data.
Yuwei Zhang, Tong Xia, Abhirup Ghosh, Cecilia Mascolo.
FL4Data-Mining workshop, KDD 2023.
4. Structural Hole Theory in Social Network Analysis: A Review.
Zihang Lin[#], **Yuwei Zhang**[#], Qingyuan Gong, Yang Chen, Atte Oksanen, Aaron Yi Ding.
IEEE Transactions on Computational Social Systems (TCSS).

EXPERIENCE

PhD Researcher

University of Cambridge

Advised by Prof. Cecilia Mascolo

Sep. 2023 – now

- Developed multimodal LLM that jointly models patient history and audio data for generalized health prediction tasks, achieving superior performance in diverse tasks and demonstrating strong zero-shot abilities
- Worked on large-scale data curation, self-supervised pretraining and comprehensive benchmarking of respiratory acoustic models on 19 health condition inference and lung function estimation tasks
- Delved into uncertainty quantification in decentralized health data, identifying and addressing key challenges in data heterogeneity and computation cost with an efficient personalized federated learning framework

Research Intern

Shanghai Artificial Intelligence Laboratory

Advised by Dr. Jingjing Qu

Mar. 2022 – Sep. 2022

- Conducted global survey of digital contact tracing apps and policies; analyzed social media data using LDA and social network analysis, revealing diverse stakeholder impacts. Paper published by *Big Data & Society*.

Research Intern

University of Göttingen

Advised by Prof. Xiaoming Fu

Jun. 2021 – Jun. 2022

- Using mobility data to analyze the functional groups, mobility patterns, and network structures of Shanghai, Singapore, and London metros, providing insights for urban planning.

Research Assistant

Advised by Prof. Yang Chen

Fudan University

Sep. 2019 – Jun. 2022

- Analyzed spatial and temporal patterns of mobile user behaviors and mood patterns; developed LSTM and GCN-based models for app usage prediction; reviewed structural hole theory in social network analysis.

Software Engineer Intern

Advised by Marcus Lao

Unity

Mar. 2021 – Sep. 2021

- Developed code for PlasticHub collaborating with a large team; lifted user experience by identifying and solving product issues. Designed test cases and product description pages for product promotion.

Software Product Sprint

Advised by Yang Yang

Google

Jul. 2020 - Aug. 2020

- Developed a GAN-based ML model in Python to convert music genres and deployed it as a web application using JavaScript, HTML, and CSS, collaborating with a team of peers.

LEADERSHIP EXPERIENCE

Women@CL Committee

University of Cambridge

- Treasurer (2023-2024), Tech Event Chair (2024-2025)
- Organizing seminars and events highlighting and supporting women and non-binary individuals' achievements in computing research, leadership and enterprise

Student Hall Manager

Fudan University

- Led a 40-member student volunteer team as Vice Director (2020-2021)

Student Union, School of Computer Science

Fudan University

- Led the video team, producing popular films, organizing events, and coordinating student teams (2019)

SELECTED AWARDS

- Examiners' Prize for a Highly Commended MPhil Project Report (**Top 2**) 2023
- Student Travel Award, KDD 2023 2023
- Chiang Chen Overseas Fellowship (**10 awardees yearly**) 2022
- Shanghai Scholarship (**Top 1%**) 2021
- Chinese National Scholarship (**Top 1%**) 2020
- Chinese National Scholarship (**Top 1%**) 2019
- Freshman Admission Scholarship of Tengfei College, Fudan University (**Top 2%**) 2018

TEACHING AND MENTORING

- **MPhil Project Supervisor** 2024
Federated Learning for Acoustic Foundation Models for Healthcare
- **Teaching Assistant** 2024
Mobile Health
- **Undergraduate Supervisor** 2023 – now
Machine Learning and Real-world Data

SKILLS

- **Knowledgeable In:** Machine Learning, Deep Learning, Mobile Health, Trustworthy AI
- **Programming:** Python, PyTorch, Java, MATLAB, C/C++, Go, JavaScript, HTML, CSS
- **Spoken languages:** Chinese-Native, English-Fluent (**TOEFL iBT:** 111, **GRE:** 332)