Yu Yvonne Wu

yw573@cam.ac.uk
https://yvonneywu.github.io/
Computer Laboratory
15 JJ Thomson Ave
Cambridge, UK

Research Interests

My research interests focus on building human-centered systems, incorporating wearable sensing technologies and advanced learning algorithms. Specifically, my work include:

- **Accessible Health Sensing:** Exploring novel sensing modalities without specialized equipment, such as earables, to enable fitness and well-being monitoring.

- **AI for Sequential & Multimodal Data:** Advancing the development of foundation models using self-supervised learning techniques to analyze fine-grained, person-generated sequential and multimodal data.

- **Trustworthy Deep Learning**: Improving the robustness and generalization in deep learning for more reliable health outcome predictions.

Education

2021 - 25[*]	**Ph.D. in Computer Science**, University of Cambridge, UK (Advisor: Cecilia Mascolo) Funded by Nokia Bell Labs
2019 - 21	**MSc in Electrical and Computer Engineering**, Rice University, USA (Advisor: Akane Sano)
2015 - 19	**BSc in Electrical Engineering**, Nanjing University of Posts and Telecommunication, China

Experience

2024 - 25	**Microsoft Research Asia**, Shanghai, China (Oct - Feb) *Research Intern in Wireless System Group*, hosted by Prof. Lili Qiu Worked on developing the first earphone collected EXG foundation model for human senses monitoring.
2021 - 25	**University of Cambridge**, Cambridge, UK *PhD Researcher, Department of Computer Science and Technology* Focused on developing advanced, generalizable AI models for analyzing physiological signals to enhance well-being monitoring and health inference. *Teaching Assistant/Supervisor, Various Cambridge Colleges and CST Department*

---

[*]Expected.

1

2019 - 21   **Rice University**, Houston, USA
Master Researcher at Computational Wellbeing Group
Developed computational models for emotional intelligence, focusing on stress detection through mobile computing.

Publications

Peer-reviewed journals, conferences, workshops

1. **Wu, Y.**, Dang, T., Spathis, D., Jia, H., and Mascolo, C. (2024). StatioCL: Contrastive Learning for Time Series via Non-Stationary and Temporal Contrast. *ACM International Conference on Information and Knowledge Management (**CIKM**), Boise, USA*.
https://dl.acm.org/doi/10.1145/3627673.3679732

2. Zhang, Y., Xia, T., Han, J., **Wu, Y.**., Rizos, G., Liu, Y., Mosuily, M., Chauhan, J., and Mascolo, C. (2024). Towards Open Respiratory Acoustic Foundation Models: Pretraining and Benchmarking. *Advances in Neural Information Processing Systems (**NeurIPS**) Datasets and Benchmarks track. Vancouver, Canada.*
https://doi.org/10.48550/arXiv.2406.16148

3. **Wu, Y.**, Spathis, D., Jia, H., Perez-Pozuelo, I., Gonzales, T. I., Brage, S., Wareham, N., and Mascolo, C (2023). UDAMA: Unsupervised Domain Adaptation through Multi-discriminator Adversarial Training with Noisy Labels Improves Cardio-fitness Prediction. *Machine Learning for Healthcare (**MLHC**), New York, USA.*
https://proceedings.mlr.press/v219/wu23a.html

4. Spathis, D., Pozuelo, I., Gonzales, T., **Wu, Y.**, Brage, S., Wareham, N., and Mascolo, C. (2022). Longitudinal cardio-respiratory fitness prediction through wearables in free-living environments. *Nature Digital Medicine (**npj Digit. Med.**),5(176)*. https://doi.org/jpcc

5. **Wu, Y.**, Spathis, D., Jia, H., Pozuelo, I., Gonzales, T., Brage, S., Wareham, N., and Mascolo, C. (2022). Turning Silver into Gold: Domain Adaptation with Noisy Labels for Wearable Cardio-Respiratory Fitness Prediction. *Machine Learning for Health (**ML4H**), New Orleans, USA.* https://doi.org/kd4j

6. Ketmalasiri, T., **Wu, Y.**, Butkow, K., Mascolo, C., and Liu, Y. (2024). IMChew: Chewing Analysis using Earphone Inertial Measurement Units. *Workshop on Body-Centric Computing Systems (**BodySys @ MobiSys**), Tokyo, Japan.*
https://dl.acm.org/doi/pdf/10.1145/3662009.3662023

Manuscripts under review

1. **Wu, Y.**, Dang, T., and Mascolo, C. (2025). Generalized Irregular Clinical Time Series Regression Via Masking and Reconstruction Pretraining.

2. **Wu, Y.**, Chen, X., Lee, S., Yoon, H., Lu, T., Liu, Y., Lee, S., Chen, D., Mascolo, C, and Qiu, L. (2025). A Foundation Model for Advanced Earphone-Based Sensing.

3. Shen, F., **Wu, Y.**, and Dang, T. (2025). Exploring Large Language Models for Healthcare Time Series Classification with Data Missingness.

4. Vavaroutas, S., **Wu, Y.**, and Mascolo, C. (2025). Uncertainty-Guided Parameter-Efficient Tuning for OOD Mitigation in Biosignal Pretrained Models.

Awards & Honors

2024	Graduate Research Travel Grant, Robinson College, University of Cambridge
	£500 grant to attend *CIKM'24*.
2023	Travel Award, DeepMind
	$600 grant to attend *MLHC'23*.
2021–	Nokia Bell Labs Scholarship, Cambridge, UK
	Full Phd Scholarship.

Academic Service

Program Committee Member

2024	Human-Centric Representation Learning @AAAI'24
2022	Wellcomp @Ubicomp'22

Reviewer ICLR, ICML, AAAI, IJCAI, KDD,Ubicomp/IMWUT and more.

Mentoring & Teaching

Mentoring

2023-24	Tamisa Ketmalasiri: *Earable for Chewing Counting: a Feasibility Study.*
2024-25	Andres Alvarez Olmo: *Benchmarking Foundation Models on Out-Of-Distribution Biosignal Time Series.*

Teaching

2024&25	Teaching Assistant at University of Cambridge, *Mobile Health*
2024	Demonstrator at University of Cambridge, *Machine Learning and Real-world Data*
2020	Teaching Assistant at Rice University, *Machine learning for data science (DSCI 303)*