

RESEARCH INTERESTS

My research interests focus on building better artificial intelligence to understand, model, and intervene multi-modal data, especially time-series data (e.g., wearables or biosignals) to improve health and well-being. I am actively working and publishing on the following topics:

- Representation learning: Learning without explicit human annotation through self-supervision tasks.
- Generalizable Machine learning: Exploring domain adaptation and generalization to tackle distribution shift challenges.

EDUCATION

University of Cambridge

Ph.D. in Computer Science, Supervisor: Prof. Cecilia Mascolo
Funded by Nokia Bell Labs

Cambridge, UK
2021–Present

Rice University

M.S. in Electrical & Computer Engineering, Supervisor: Prof. Akane Sano

Houston, USA
2019–2021

Nanjing University of Posts and Telecommunications

B.S. in Electrical & Computer Engineering

Nanjing, China
2015–2019

RELEVANT EXPERIENCE

Mobile Systems Research Lab, University of Cambridge

PhD student

Cambridge, UK
10/2021–Present

- Design **self-supervised learning** algorithm for robust time-series learning representations in **time-series** data.
- **Unsupervised domain adaptation** for wearable and health data.
- Exploring sequential models for cardio-respiratory fitness prediction through wearables

Computational Wellbeing Group, Rice University

Research Assistant

Houston, USA
09/2019–12/2020

- Semi-Supervised mental health prediction based on human behavioral data using GNN
- Estimating Physiological Signal and Behavioral Features through Photoplethysmography from Remote Sensing

PUBLICATIONS

- [1] **Wu, Y.**, Spathis, D., Jia, H., Perez-Pozuelo, I., Gonzales, T. I., Brage, S., Wareham, N., Mascolo, C., “Udama: Unsupervised domain adaptation through multi-discriminator adversarial training with noisy labels improves cardio-fitness prediction”, *Machine learning for Healthcare (MLHC)*, 2023.
- [2] Spathis, D., Perez-Pozuelo, I., Gonzales, T. I., **Wu, Y.**, Brage, S., Wareham, N., Mascolo, C., “Longitudinal cardio-respiratory fitness prediction through wearables in free-living environments”, *npj Digital Medicine*, vol. 5, no. 1, p. 176, Dec. 2022, ISSN: 2398-6352.
- [3] **Wu, Y.**, Spathis, D., Jia, H., Perez-Pozuelo, I., Gonzales, T. I., Brage, S., Wareham, N., Mascolo, C., “Turning silver into gold: Domain adaptation with noisy labels for wearable cardio-respiratory fitness prediction”, *Machine learning for Health (ML4H)*, 2022.

HONORS AND AWARDS

- Travel Award (by DeepMind) MLHC'23 2023

TEACHING AND SUPERVISIONS

- **Undergraduate Project Supervisor** at University of Cambridge Fall 2023
Eearable for Chewing Counting: a Feasibility Study
- **Teaching Assistant** at Rice University Fall 2020
Machine learning for data science (DSCI 303)