

XIDONG WU

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EDUCATION

University of Dundee & Northeastern University

Undergraduate, Biomedical Engineering

2022 - 2026

GPA:87/100

MAIN PUBLICATIONS

- **Wu, X.**, Yan, M., Wang, R., & Xie, L. Multiscale feature enhanced gating network for atrial fibrillation detection. *Computer Methods and Programs in Biomedicine* (Q1 IF 4.9)
- **Wu, X.**, Yan, M., Tang, H., Wu, D., & Xie, L. MSCGN: Multiscale complementary gating network for time series classification. *Biomedical Signal Processing and Control* (Q1 IF 4.9)
- **Wu, X.**, Chen H., Li Z., & Li, C. OG-SAM: Enhancing Multi-Organ Segmentation with Organogenesis-Based Adaptive Modeling. *Medical Image Computing and Computer Assisted Intervention Workshop* (Oral)
- **Wu, X.**, Tang, H., Wu, D., Jiang B., & Xie, L. Adaptive Aliasing Denoising Module for Noise-Robust Time Series Classification. *Engineering Applications of Artificial Intelligence* (Q1 IF 7.5) *Under Review*
- Wu, D., **Wu, X.**, Chen, M., Yu, C., & Xie, L. Time-varying and time-invariant feature bidirectional fusion network for recognizing unknown type of arrhythmia. *Neural Networks* (Q1 IF 6.0) *Under Review*
- Tang, H., Cui, H., **Wu, X.**, & Xie, L. PhysioSAug: A novel data augmentation method based on diffusion probabilistic model for disease classification using physiological signals. *Engineering Applications of Artificial Intelligence* (Q1 IF 7.5) *Under Review*
- Tang, H., Yan M., **Wu, X.**, Lai, H., Zhang Y., Cui H., & Xie, L. Element-wise Product Enhanced Lightweight Model for Efficient ECG Arrhythmia Detection on Embedded Devices. *Computer Methods and Programs in Biomedicine* (Q1 IF 4.9) *Under Review*

RESEARCH EXPERIENCE

Multi Omics Driven Multi Organ Segmentation and Genomic Imaging Research

University of Cambridge, Faculty of Mathematics

04/2024 - now

- We proposes OG-SAM (Organogenesis SAM), a multi organ segmentation framework based on organogenesis. By mimicking the organ differentiation pathway during embryonic development and dynamically adjusting the shared and unique feature representations between organs through parameter sharing and specialization, the accuracy and robustness of segmentation are improved.
- Design OG-SAM as a query based plugin that seamlessly integrates with SAM, using organ categories as queries to dynamically adjust the parameters of each organ, achieving precise segmentation for specific organs, especially when dealing with complex organ boundaries.

Atrial fibrillation detection based on electrocardiogram signals

Northeastern University, Faculty of Biomedical Engineering

03/2023 - 9/2025

- Leveraging medical priors to enhance atrial fibrillation detection.
- Utilized Diffusion Models to effectively address the issue of data imbalance. The noise network could accurately filter out noise interference in complex and noisy environments.
- Designed a lightweight deployment strategy to optimize resource allocation and reduce hardware requirements.

TECHNICAL SKILLS

TensorFlow, Keras, PyTorch, Python, Overleaf, Word