

Jiatao Yan

AI POSTGRADUATE STUDENT WITH A FOCUS ON COMPUTER VISION & MEDICAL AI

☎ (+86) 188-6820-5508 | ✉ momokoyjt@outlook.com / jy372@sussex.ac.uk | 🏠 momokoyjt.top | 📄 momokoyjt

Summary

- M.Sc. in Artificial Intelligence and Adaptive Systems (Distinction). Interests: multimodal clinical AI, interpretable modeling, and representation learning.
- Hands-on experience with deep learning pipelines (PyTorch/TensorFlow) for imaging and multi-modal data; familiar with reproducible development (Git, Docker, LaTeX).
- Research outputs include peer-reviewed publications and ongoing manuscripts; comfortable collaborating with clinical and cross-disciplinary teams.

Education

Sussex Artificial Intelligence Institute, Zhejiang Gongshang University

Hangzhou, China

MASTER IN ARTIFICIAL INTELLIGENCE AND ADAPTIVE SYSTEMS (DISTINCTION)

Sept 2024 – Jan 2026

- Overall average mark: 79.
- Thesis: Disentangling physics, anatomical, time, and identity information in latent variables of medical images.
- Focus: Alzheimer's disease; interpretable representation learning for medical images.
- Core Courses: Image Processing, NLP, ML, Intelligence in Animals and Machines, Python Programming.

Wenzhou Business College

Wenzhou, China

B.S. IN COMPUTER SCIENCE AND TECHNOLOGY

Sept 2019 – June 2023

- GPA: 3.41/5.0 (84.7/100)
- Thesis: Smoking Behavior Detection Based on Deep Learning and Skeletal Frameworks.

Research & Internship Experience

First Affiliated Hospital of Wenzhou Medical University - Hepatobiliary and Pancreatic Surgery Laboratory

Wenzhou, China

RESEARCH INTERN

Sept 2022 – Jan 2023

- Developed medical image preprocessing software, obtained software copyright (2022SR0252378).
- Contributed to deep learning model for leukemia diagnosis and exosome feature analysis in hepatocellular carcinoma research.

Zhejiang University Urban Planning and Design Institute

Hangzhou, China

RESEARCH INTERN

Sept 2025 – Dec 2025

- Developed intelligent document processing and multi-agent workflow systems for government/enterprise scenarios.
- Introduced MCP tools and pluggable toolchains, implemented multi-agent collaboration and observability.

Huawei Ascend NPU Migration Project

Hangzhou, China

GOVERNMENT-ENTERPRISE PROJECT PARTICIPANT

Sept 2025 – Dec 2025

- Migrated CUDA-based YOLOv8 training/inference pipeline to 8×Huawei Ascend 910B (NPU).
- Completed CANN/ACL adaptation and HCCL multi-card training, fixed critical operator differences and aligned precision.
- Optimized data pipeline and graph mode execution for containerized deployment while maintaining mAP performance.

National Innovation Training Program for University Students (Project No. 202213637004)

Wenzhou, China

PROJECT LEAD

June 2022 – June 2023

- First principal investigator of national-level research project. Responsible for technical design, team management, and project completion.

Publications

Machine Learning Identifies Exosome Features Related to Hepatocellular Carcinoma

PUBLISHED IN *Frontiers in Cell and Developmental Biology*

Sept 2022

- Authors: Kai Zhu, Qiqi Tao, **Jiatao Yan**, Zhichao Lang, Xinmiao Li, Yifei Li, Congcong Fan, Zhengping Yu
- DOI: 10.3389/fcell.2022.1020415
- Contribution (Co-first author, 3rd): Designed ML pipeline, applied Random Forest/SVM-RFE/LASSO algorithms to identify key biomarkers from exosome proteomics data.

Multi-omics and Machine Learning-driven CD8+ T Cell Heterogeneity Score for Prognosis

PUBLISHED IN *Molecular Therapy Nucleic Acids*

Dec 2024

- Authors: Di He, Zhan Yang, Tian Zhang, Yaxian Luo, Lianjie Peng, **Jiatao Yan**, et al.
- DOI: 10.1016/j.omtn.2024.102413
- Contribution: Implemented LASSO regression and other ML algorithms to identify key genes for HNSCC prognosis, supporting CD8+ T cell heterogeneity score construction.

Using Multiomics and Machine Learning: Insights into Improving the Outcomes of Clear Cell Renal Cell Carcinoma via the SRD5A3-AS1/hsa-let-7e-5p/RRM2 Axis

PUBLISHED IN *ACS Omega*

June 2025

- Authors: Mouyuan Sun, Zhan Yang, Yaxian Luo, Luying Qin, Lianjie Peng, Chaoran Pan, **Jiatao Yan**, Tao Qiu, Yan Zhang
- DOI: 10.1021/acsomega.5c01337
- Contribution: Implemented ML algorithms to validate SRD5A3-AS1/hsa-let-7e-5p/RRM2 signaling axis role in clear cell renal cell carcinoma.

A multi-data fusion deep learning model for prognostic prediction in upper tract urothelial carcinoma

PUBLISHED IN *Frontiers in Oncology*

Aug 2025

- Authors: Hongdi Sun, Siping Chen, Yongxing Bao, Fengyan You, Honghui Zhu, Xin Yao, Lianguo Chen, Jiangwei Miao, Fanggui Shao, Xiaomin Gao, Binwei Lin
- DOI: 10.3389/fonc.2025.1644250
- Contribution: Designed DL architecture for multi-phase CT analysis, developed methods to integrate imaging features with clinical data for survival prediction.

Manuscripts Under Review & In Preparation

YOLOv11-LCDFs: Enhanced Smoking Detection With Low-light Enhancement

Under Review

- Authors: **Jiatao Yan**, Zhuzikai Zheng, Zhengtan Yang, Hao Jiang, Peichen Wang, Fangjun Kuang, Siyang Zhang
- Contribution (First author): Developed YOLO-based architecture with low-light enhancement, attention mechanisms, and optimized upsampling.

A Spatio-Temporal Graph Transformer for Decoding Motor Imagery from fNIRS in Post-Stroke Patients

In Preparation

- Authors: **Jiatao Yan** (First author)
- Contribution: Proposed STGT for fNIRS motor imagery decoding; achieved 79.8% LOSO accuracy and outperformed SVM/CNN/LSTM baselines.

Validating TCM Kidney-Brain CoTreatment Theory for PostStroke Dysphagia via Explainable Multimodal AI

In Preparation

- Authors: **Jiatao Yan** (First author)
- Contribution: Built explainable multimodal models by fusing brain lesion imaging with clinical features; evaluated mediation-based causal hypotheses.

A Deep Learning Model for Automated Sonographic Assessment of Diastasis Recti Abdominis

In Preparation

- Authors: **Jiatao Yan** (First author)
- Contribution: Developed DL pipeline for automated ultrasound assessment of DRA, including rectus abdominis segmentation and keypoint estimation.

Projects & Achievements

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| 2026 | Ranked 97th/1424 (Top 7%) , PhysioNet - Digitization of ECG Images | Kaggle Competition |
| 2025 | Ranked 255th/1365 (Top 19%) , Yale/UNC-CH - Geophysical Waveform Inversion | Kaggle Competition |
| 2023 | Ranked 441st/1174 (Top 38%) , HuBMAP + HPA - Hacking the Human Body | Kaggle Competition |
| 2024 | Ranked 116th/3310 (Top 4%) , Predict Podcast Listening Time | Kaggle Competition |
| 2024 | Ranked 178th/4316 (Top 5%) , Predict Calorie Expenditure | Kaggle Competition |
| May 2023 | Bronze Medal , 18th "Challenge Cup" Provincial College Student Competition | Zhejiang Province |
| Apr 2024 | Student Member Computer Innovation and Entrepreneurship Award , Wenzhou Computer Society | Wenzhou, China |

Patents & Intellectual Property

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| Software Copyright , Medical Image Computing Software | 2022SR0252378 |
| Software Copyright , Human Skeleton Recognition Software | 2022SR1258998 |
| Software Copyright , Cigarette Recognition Software | 2022SR1277520 |
| Software Copyright , Smoking Behavior Detection Software | 2022SR1277521 |