Kevin Qizheng Zhao

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Personal Statement

I am a Master's student in Health Informatics (Karolinska Institutet and Stockholm University) with a Bachelor degree in Preventive Medicine (Sun Yat-sen University). My research focuses on deep learning-based clinical prediction and epidemiology of neurodegenerative diseases. Over the past several years, I have developed end-to-end deep learning pipelines, conducted large-scale cohort analyses using UK Biobank and NHANES, and applied genetic epidemiology methods including Mendelian randomization and GWAS-based frameworks. I am currently a Research Assistant in the Brain Connectomics group (PI: Joana Pereira, Karolinska Institutet), where my work centres on plasma proteomics in Alzheimer's disease.

Education

Karolinska Institutet & Stockholm University **Sep 2025 – Jun 2027 (expected)**
M.Sc., Dept. of Learning, Informatics, Management and Ethics (LIME)
Joint Master Program in Health Informatics

Sun Yat-sen University **Sep 2020 – Jun 2025**
Bachelor of Medicine, School of Public Health
Preventive Medicine

Publications

[1] Chen, M., Yu, L., **Zhao, Q.**, et al. A data-knowledge driven approach with wearable sensors for intelligent gait disorders identification. *Biomedical Signal Processing and Control*, 2026; 111:108289. (IF 4.9)

[2] **Zhao, Q.**, Wu, R., Chen, M., Tsui, K.-L., & Zhao, Y. MIEF-Net: Multimodal image-enhanced fusion network for intelligent fall risk prediction. *Neural Networks*, 2025; 195:108260. (IF 6.3)

[3] Chen, M., Zhang, L., Yu, L., Yeung, E.H., **Zhao, Q.**, et al. An advanced integrated sensor-based method for fall risk assessment in a rehabilitation setting. *IEEE Sensors Journal*, 2025; 25(11):36544. (IF 4.5)

[4] **Zhao, Q.**, Fan, X., Chen, M., et al. MSS-Former: Multi-scale skeletal transformer for intelligent fall risk prediction in older adults. *IEEE Internet of Things Journal*, 2024; 11(20):33040–33052. (IF 8.9)

[5] **Zhao, Q.**, Chen, M., Fu, L., Yang, Y., & Zhan, Y. Assessing and projecting the global burden of thyroid cancer, 1990–2030: Analysis of the Global Burden of Disease Study. *Journal of Global Health*, 2024; 14:04090. (IF 4.5)

[6] **Zhao, Q.**, Chen, M., & Zhao, Y. MIEFP-Net: A multimodal image-enhanced network for fall prediction using IMU data. Poster presented at the *15th ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics*, Shenzhen, China, Nov 22–25, 2024.

[7] Wang, X., Cao, J., **Zhao, Q.**, et al. Identifying sensors-based parameters associated with fall risk in community-dwelling older adults: An investigation and interpretation of discriminatory parameters. *BMC Geriatrics*, 2024; 24(1):125. (IF 3.8)

[8] Luo, J., Wang, X., Chen, M., **Zhao, Q.**, & Zhao, Y. Enhancing city-level influenza nowcasting on island terrain with graph neural networks: Spatial feature insights. In: *Intelligent Systems and Applications (IntelliSys 2024)*. Lecture Notes in Networks and Systems, 2024; 1068:11–22.

Funding

PI for Shenzhen Medical Research Fund (No. A2301041; ¥50,000) **Jan 2024 – Mar 2025**

Research on Real-time Risk Identification Self-Prediction Model and Intelligent Intervention System for Elderly People's Gait Based on Deep Learning and Deep Imaging Data.

Outcome: Project Completion Review rated as **"Excellent"**; Publication [2] on *Neural Networks*.

Research Experience

Brain Connectomics Group (PI: Prof. Joana Pereira), Karolinska Institutet **Jan 2026 – Present**

Department of Epidemiology (PI: Prof. Yiqiang Zhan), Sun Yat-sen University **Jul 2023 – Jul 2025**

Intelligent Sensing and Proactive Health Research Center (PI: Prof. Yang Zhao), Sun Yat-sen University **Mar 2022 – Jul 2025**

Department of Biostatistics (PI: Prof. Xiangjun Du), Sun Yat-sen University **Jan 2021 – Dec 2021**

Professional Experience

Medical Trainee **Sep–Nov 2023 & Jul–Sep 2024**

The Eighth Affiliated Hospital of Sun Yat-sen University

Supported daily clinical care through patient consultations, physical examinations, and medical documentation. Assisted lead surgeons in 10+ general and gynaecological procedures.

Medical Trainee **Sep–Oct 2024**

Shenzhen Third People's Hospital

Contributed to inpatient care via ward rounds and case discussions, supporting clinical decision-making. Completed infection-control training for outbreak prevention and management.

Public Health Intern **Oct 2024 – Mar 2025**

Shenzhen Bao'an Women's and Children's Hospital

Supported maternal and child health programs through prenatal/postnatal education and child mental health activities. Collected and analysed health data to evaluate community outcomes.

Honours & Awards

2025 Excellent Undergraduate Thesis, Sun Yat-sen University

2025 Project Completion Review rated as **"Excellent"** - Shenzhen Medical Research Fund (SMRF)

2023 Second Prize, Guangdong Provincial Statistical Modelling Competition (Undergraduate Group)

2023 Outstanding Project, National Innovation and Entrepreneurship Training Program for College Students

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Skills

Programming & Statistical Computing

Python (NumPy, pandas, scikit-learn, PyTorch), R (statistical modelling, epidemiological analyses, reproducible workflows), SAS (survey and cohort data processing).

Deep Learning & Machine Learning

End-to-end model development in PyTorch; familiarity with Keras/TensorFlow. Core competencies include multimodal fusion, sequence and time-series modelling, Transformer architectures, and graph neural networks (GNNs) for spatial-epidemiological prediction.

Biomedical Signal Processing & Wearable Sensing

Sensor-based health monitoring using IMU and wearable devices; digital biomarker extraction, spectral analysis, and motion recognition for geriatric applications including fall risk assessment and gait analysis.

Proteomics & Bioinformatics

Plasma proteomics analysis; differential expression analysis and pathway enrichment; integration of multi-dimensional omics data with clinical and cognitive measures from longitudinal cohorts.

Epidemiology & Genetic Epidemiology

Large-scale cohort analysis (UK Biobank, NHANES, GBD Study); Mendelian randomization for causal inference; GWAS fundamentals including quality control, association testing, and population stratification; disease burden modelling and trend projection.

Language

English (Fluent), Mandarin (Native), Cantonese (Native), Swedish (Beginner)

Cooking

Cantonese cuisine (proficient), Hunanese cuisine (proficient), general Chinese cuisine, Baking (competent), and Western cuisine (competent).