JINJIN GUO

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EDUCATION

Nanyang Technological University, Singapore 08/2024 - 01/2026

Master of Signal processing and machine learning

- CGPA: 4.25/5
- Relevant Coursework: Genetic Algorithm and Machine Learning, Natural Language Processing, Advanced Digital Signal Processing, Smart Biosensors and Systems

University of Electronic Science and Technology of China, China 09/2020 – 06/2024

Bachelor of Communication Engineering

- Relevant Achievements: Outstanding Student scholarship for three years
- Relevant Coursework: Signals and Systems, Digital Image Processing, Deep Learning, Computer Networking

PUBLICATION

Zhen Xu, **Jinjin Guo**, Lang Qin*, Yuntao Xie, Yao Xiao, Xinran Lin, Qiming Li, “Predicting ICU Interventions: A Transparent Decision Support Model Based on Multivariate Time Series Graph Convolutional Neural Network,” in *IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS, VOL. 28, NO. 6, JUNE 2024.*

INTERNSHIP EXPERIENCE

Shenzhen GrenTech Communication Co., Ltd. 07/2022 – 08/2022

Department of Wireless Testing, Intern

- Learned the basics of wireless communications and 5G technology
- Assisted in setting up and checking base stations in laboratories, setting up and configuring virtual environments

ACADEMIC PROJECT

Intelligent machine that extracts single cells and generates automated protocols in A*star 02/2025 – Now

- Writing Keil and Python code to enable single-cell detection and microtitration tasks for the STM32F103 series
- Solving communication problems between the various components, like the signal generator AD9837
- Building the circuit and connecting the components

Tensor-based Alzheimer's Disease Detection from Diffusion Tensor Imaging 06/2023 – 05/2024

- Used FSL to preprocess MRI dataset and trained the network model PARAFAC2 using Matlab
- Performed feature extraction on the data to obtain geometric features and histogram features for each brain region
- Designed comparative experiments with existing methods, then wrote the final paper

Decision Support Model based on Multivariate Time Series Graph Convolutional Neural Network for ICU Interventions Prediction 05/2022 – 01/2024

Awards: 1. Bronze Medal in the 8th China International College Student’s Internet+ Innovation and Entrepreneurship
2. Second Prize in the 2022 2nd Sichuan Biomedical Engineering Innovation and Design Competition

- Responsible for assisting in data processing, experiment design, and implementation
- Extracted the static features of the patient and the temporal features of the adaptation tasks
- Realized EHR data conversion to time-series data adaptable to deep learning networks
- Performed model fine-tuning of the functional testing to verify the prediction accuracy, which improved to 91.9%
- Led the team to participate in competitions above

Design and Fabrication of an Intelligent Robotic Car based on STM32 Microcontroller 03/2023 – 06/2023

Team Project completed by ten members to design a robotic car with functions including line tracking, image recognition, etc

- Used the UART serial communications to realize the communication between the OpenMV and the HC-12
- Applied the Bluetooth HC-12 module to the wireless data transmission between the HC-12 and the PC

AI-based Electrocardiogram (ECG) Analysis System 07/2021 – 07/2022

- Processed the 6,877 items of data from the CPSC2018 ECG dataset by excluding the abnormal data
- Established a convolutional neural network (CNN) model based on Python programming and PyTorch, trained and tested the model repeatedly, and achieved an accuracy of 80.1%
- Introduced the deformable convolution to build the Deform-CNN for optimization, achieving an accuracy of 86.3%

PERSONAL SKILLS

- Digital Skills: Python, MATLAB, C++, Microsoft Office
- Other Skills: Proficient in Chinese and English (IELTS 6.5), Piano, Singing, Yoga, Planning

OTHER HONORS

- 2024.07 Ashtanga Yoga Instructor Certification
- 2024.06 First Prize of Vocal Group in the Seventh China University Student Art Exhibition
- 2021.07 UESTC Outstanding Social Practice Individual