

Linnan Huang | Curriculum Vitae

 github.com/Hlnnnn

 <https://hlnnnn.github.io/Linnan.github.io/>

hln6666661@gmail.com  (+86) 15858910478

RESEARCH INTEREST

Non-Stationary Signal Decomposition, Acoustic Beamforming, Signal Processing
Sparse Optimization, Bayesian Learning, Model-Driven Deep Learning

EDUCATION

Zhejiang Pharmaceutical University

Zhejiang, CHN

Bachelor of Engineering in Assistive Devices and Rehabilitation Engineering

September 2022 - July 2026

- GPA: 3.07/5 (as of Spring 2025)
- Rank: 2/26

Internship Experience

- Research Intern, Ningbo Institute of Materials Technology Engineering, CAS June 2025 - June 2026
- **Internship Content:** Participated in clinical EEG data acquisition and preprocessing to construct research datasets; extracted temporal, spectral, and spatial EEG features and conducted multidimensional feature modeling to enable early cognitive impairment detection
- **Internship Summary:** Demonstrated proficiency in clinical EEG acquisition and standardized preprocessing workflows; capable of independently completing the full research pipeline from data preprocessing and feature extraction to model development

Research Projects

- Intelligent Diagnosis of Cognitive Impairment Based on Multidimensional EEG Feature Fusion June 2025-June 2026
 - Project Source: 2024 Zhejiang Provincial Research and Development Program
 - Data Source: Ningbo Li Huili Hospital, Thessaloniki dataset

Data Collection and Preprocessing : Processed EEG data to remove artifacts, performed filtering and segmentation, and constructed a standardized EEG dataset

Feature Extraction: Extracted EEG features using a three-branch deep learning framework, with temporal (TSAR), spectral (2D-CNN) and spatial (GCN) encoders to construct multidimensional EEG representations

Model Construction: Designed the STF framework to align and attentively fuse temporal, spectral, and spatial EEG features into a unified representation for intelligent cognitive impairment recognition and classification
- Sensitivity Analysis of Patient Speech Corpora Using Transformer-SA and MFCC Features June 2025-June 2026
 - Project Source: Zhejiang Provincial Department of Education Research Project (Y202147891)
 - Data Source: Clinical Data

Data Preprocessing: Performed speech segmentation, silence removal, and parameter normalization using Praat

Feature Extraction: Extracted 24-dimensional Mel-Frequency Cepstral Coefficients (MFCCs) using MATLAB to construct acoustic feature representations

Model Design: Developed a lightweight Transformer network to efficiently model acoustic features and perform classification

Publication: Manuscript drafted for submission to an SCI journal

Honors & Awards

- **National Third Prize, 10th National University Students Biomedical Engineering Innovation and Design Competition**, Chinese Society of Biomedical Engineering 2025
- **Silver Award in the “Agricultural Bank Cup” Zhejiang Provincial International College Students Innovation Competition**, Zhejiang Provincial University Students’ Science Competition Committee 2025
- **Third Prize, 3rd Campus Psychological Drama Competition for Universities in Ningbo**, Ningbo Education Bureau 2025
- **Excellent Student Cadre, College Level**, Zhejiang Pharmaceutical University 2025
- **University-level Academic Excellence Scholarship**, Zhejiang Pharmaceutical University 2025
- **Outstanding Student Leader (College-level)**, Zhejiang Pharmaceutical University 2024
- **Second-Class University-level Scholarship**, Zhejiang Pharmaceutical University 2024
- **Second Prize, 14th “Challenge Cup”China College Students’ Entrepreneurship Plan Competition (University-level)**, Zhejiang Pharmaceutical University 2024

SKILLS

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|----------------------------|---|
| Programming | Matlab, LaTex, Python, Pytorch |
| Deep Learning Model | Transformer,CNN,GNN,TSAR, SA,SE,STF-net |
| Languages | Chinese, English, German |
| Software | Office, anaconda, pycharm |

Relevant Coursework

- **Undergraduate Studies:**

Comprehensive Computer Programming Practice (87), Linear Algebra (91), Advanced Mathematics II (83)
Rehabilitation of Common Diseases (92), Electronic Technology II (76), Intelligent Manufacturing Technology (92)
Principles of Medical Devices (92), Design and Application of Rehabilitation Devices (89), Medical Metallic Materials (90), Sensors and Internet of Things Technology(82)

REFERENCES

- **Dr.Yitian Zhao** Deputy Director ,Senior Researcher
Ningbo Institute of Materials Technology and Engineering, CAS
Email:yitian.zhao@nimte.ac.cn
- **Dr.Guokun Zuo** Senior Researcher, PhD Supervisor
Ningbo Institute of Materials Technology and Engineering, CAS
Email:moonstone@nimte.ac.cn

