Wenbo Huang

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1996-10

EDUCATION

Nanjing Tech University Sep 2015 - Jun 2019
Automation Bachelor College of Electrical Engineering and Control Science Nanjing, Jiangsu, China

Nanjing Normal University Sep 2019 - Jun 2022
Control Science and Engineering (Pattern Recognition and Intelligent System) Master School of Electric and Autumation Engineerning/College of Computer and Electronic Information Nanjing, Jiangsu, China

Southeast University Sep 2022 - Jun 2025
Computer Science and Tecenology (Artificial Intelligence) Doctor School of Computer Science and Engineerning Nanjing, Jiangsu, China

- Excellent Ph.D Training Program

RESEARCH INTERESTS

Ubiquitous Computing and Machine Learning

PUBLICATION

Paper:

- **Wenbo.Huang**, Lei.Zhang*, Hao.Wu, et al. *Channel-Equalization-HAR: A Light-weight Convolutional Neural Network for Wearable Sensor Based Human Activity Recognition*, **DOI: 10.1109/TMC.2022.3174816, IEEE Transactions on Mobile Computing (CCF Rank A, IF=6.075, ESI 1% High Cited), 2022.**
- **Wenbo.Huang**, Lei.Zhang*, Shuoyuan.Wang, et al. *Deep Ensemble Learning for Human Activity Recognition Using Wearable Sensors via Filter Activation*, **DOI: 10.1145/3551486, ACM Transactions on Embedded Computing Systems (CCF Rank B, IF=1.886), 2022.**
- **Wenbo.Huang**, Lei.Zhang*, Qi.Teng, et al. *The Convolutional Neural Networks Training with Channel-Selectivity for Human Activity Recognition Based on Sensors*, **DOI: 10.1109/JBHI.2021.3092396, IEEE Journal of Biomedical and Health Informatics (Old Name：IEEE Transactions on Information Technology in Biomedicine, CCF Rank C, IF=7.021), 2021.**
- **Wenbo.Huang**, Lei.Zhang*, Wenbin.Gao, et al. *Shallow Convolutional Neural Networks for Human Activity Recognition using Wearable Sensors*, **DOI: 10.1109/TIM.2021.3091990, IEEE Transactions on Instrumentation and Measurement (CIS Rank T1, CAA Rank B, IF=5.332), 2021.**
- Wenbin.Gao, Lei.Zhang*, **Wenbo.Huang**, et al. *Deep Neural Networks for Sensor Based Human Activity Recognition Using Selective Kernel Convolution*, **DOI: 10.1109/TIM.2021.3102735, IEEE Transactions on Instrumentation and Measurement (CIS Rank T1, CAA Rank B, IF=5.332), 2021.**
- Xing.Wang, Lei.Zhang*, **Wenbo.Huang**, et al. *Deep convolutional networks with tunable speed-accuracy trade-off for human activity recognition using wearables*, **10.1109/TIM.2021.3132088, IEEE Transactions on Instrumentation and Measurement (CIS Rank T1, CAA Rank B, IF=5.332), 2021.**
- Shige.Xu, Lei.Zhang*, **Wenbo.Huang**, et al. *Deformable Convolutional Networks for Human Activity Recognition Using Wearable Sensors*, **DOI: 10.1109/TIM.2022.3158427, IEEE Transactions on Instrumentation and Measurement (CIS Rank T1, CAA Rank B, IF=5.332), 2022.**
- Chaolei.Han, Lei.Zhang*, Yin.Tang, **Wenbo.Huang**, et al. *Human Activity Recognition Using Wearable Sensors by Heterogeneous Convolutional Neural Networks*, **DOI: 10.1016/J.ESWA.2022.116764, Elsevier Expert Systems with Applications (CCF Rank C, IF=8.665.), 2022.**
- Shuoyuan.Wang, Lei.Zhang*, Xing.Wang, **Wenbo.Huang**, et al. *A novel all-MLP architecture for real-time human activity recognition in wearable devices*, **Under Review, IEEE Transactions on Biometrics, Identity and Behavior, 2021.**

Patent:

- "Human Acitivity Recognition Method based on Channel Selective convolutional Neural Network for Wearable Devices" **CN111860191A**

Copyright of Computer Software:

- Human activity recognition system based on channel selection convolutional neural network **2020SR0688827**
- Human activity recognition system based on CBAM attention channel selection convolutional neural network **2020SR0866826**
- Human activity recognition system based on residual channel selection convolutional neural network **2020SR0866812**

HONOR & AWARD

- Freshman Scholarship of Southeast University in 2022
- Outstanding Graduate student of Nanjing Normal University in 2022
- National Scholarship for Postgraduate Students in 2021 (rank 1, total 65)
- First-class Academic Scholarship of Nanjing Normal University in 2021 (rank 6, total 65)
- Outstanding Postgraduate of Nanjing Normal University in 2021 (rank 3, total 31)
- The third provincial prize of "Black Science and Technology" special Competition of the 17th "Challenge Cup" National College Students Extracurricular Academic Science and Technology Works Competition in 2021

SKILLS

- **Programming:** Proficient in Using Python libraries such as NumPy, Pandas, and SciKit-learn
- **Languages:** CET-4 522, CET-6 494
- **Activities:** Improving mathematical and algorithmic foundations of learning: Data Structure, Calculus, Probability and Statistics, Matrix Theory, Machine Learning (Zhihua Zhou), Deep Learning (CS231n)

SUMMARY

- Homepage: wenbohuang1002.github.io
- During the master's degree, I was mainly engaged in the research of human motion recognition algorithm based on wearable sensing devices under the guidance of my supervisor. I have the ability to read and write English papers. During my study, I was able to actively track **CVPR**, **NIPS**, **ICML** and other top papers, carefully analyze **Github** codes and get used to paper with code mode. I have mastered the typesetting skills of **LaTeX** papers.
- I am familiar with **Python** language, **PyTorch**, **TensorFlow**, **Keras** and other deep learning frameworks. I studied CS231n and other deep learning courses during my master's degree, and participated in the horizontal project of machine vision (Suzhou Futai Information Technology Co., LTD., Garbage classification video processing system based on deep learning).
- At present, we mainly study the method of processing redundant channels in the convolution kernel, so that the model can be deployed in the mobile terminal more efficiently and achieve the goal of high precision and low consumption. Research experience includes channel selection algorithm research on wearable devices, human pose recognition using channel communication algorithm on wearable devices, channel grafting algorithm research on wearable devices, etc.
- I used to work as a laboratory administrator, can skillfully use Ubuntu operating system and be responsible for the maintenance of laboratory deep computing server (**5 RTX3090, 1 RTX2080ti and 1 GTX1080ti**).