HUI(NORBERT) ZHENG

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RESEARCH INTERESTS

- **Neuroscience**: Computational Neuroscience; Machine Learning; Brain Decoding

EDUCATION

Peking University, Beijing, China   Sept. 2021 - Present
Ph.D. in Biology
- **Advisor**: Dr. Yunzhe Liu

Wuhan University, Wuhan, China   Sept. 2017 - Jun. 2021
B.S in Computer Science (with honors)
- **GPA**: 3.84/4.00(92.1/100)
- **Rank**: 2/32(selected from 363 students in School of Computer Science, Wuhan University)
- **Exchange**: Visiting Student at University of California, Berkeley(2019 summer)

PUBLICATIONS

* indicates equal contribution.
- Wenquan Xu, Haoyu Song, Linyang Hou, **Hui Zheng**, Xinggong Zhang, Chuwen Zhang, Wei Hu, Yi Wang, Bin Liu, "SODA: Similar 3D Object Detection Accelerator at Network Edge for Autonomous Driving," in IEEE International Conference on Computer Communications (INFOCOM), 2021.
- Yunzhe Li*, **Hui Zheng***, He Zhu*, Haojun Ai and Xiaowei Dong, "Cross-People Mobile-Phone Based Airwriting Character Recognition," in International Conference on Pattern Recognition (ICPR), 2020.

RESEARCH EXPERIENCE

Peking University, Beijing, China   Jul. 2023 - Present
Research Assistant
Advisor: Dr. Yunzhe Liu
- Research the decoding problem of MEG-image paradigm.
- Build a pre-train model that leverages MEG data across 400 subjects to get a good finetune prior, then use CLIP supervision to get a high-performance classifier to provide tools for cognitive neuroscience experiments.

Peking University, Beijing, China   Jan. 2023 - Present
Research Assistant
Advisor: Dr. Yunzhe Liu
- Research the decoding problem of sEEG-speak paradigm.
- Build a naive machine learning model that decodes sentences from sEEG signals.

Peking University, Beijing, China   Jan. 2023 - Present
Research Assistant
Advisor: Dr. Yunzhe Liu
- Research the decoding problem of EEG-sleep under TMR (Target Memory Reactivation) paradigm.
- Build a contrastive learning model that leverages both awake and sleep data across 60 subjects to decode sleep from EEG signals to provide tools for cognitive neuroscience experiments.

Peking University, Beijing, China   Jan. 2022 - Present
Research Assistant
Advisor: Dr. Yunzhe Liu
- Research the role of replay for memory consolidation.
- Build a machine replicate the replay observed in both human and rodent.

Peking University, Beijing, China   Mar. 2021 - Aug. 2021
Research Assistant
Advisor: Dr. Si Wu
- Researched the global to local information processing.
- Analyzed the dynamics of the neural network model with gap junction.

Tsinghua University, Beijing, China   Sept. 2020 - Mar. 2021
Research Assistant
Advisor: Dr. Minmin Luo
- Researched the role of pituitary cells in systemic neuroinflammation at the single-cell transcriptome level.
- Revealed the transcriptional differences of different types of pituitary cells in the process of central nervous endocrine inflammation regulation.

Tsinghua University, Beijing, China   May. 2020 - Aug. 2020
Research Assistant
Advisor: Dr. Bin Liu

- Researched the real-time processing of autonomous driving in the Internet of Vehicles.
- Designed efficient algorithms for the novel TCAM-NMC in-network accelerator, which accelerates the MEC-assisted similar 3D object detection for autonomous driving.

Wuhan University, Wuhan, China   Feb. 2020 - Apr. 2020
Research Assistant
Advisor: Dr. Haojun Ai

- Researched transfer learning in Air-Writing.
- Developed a system that could transfer between different people.

AWARDS AND HONORS

Outstanding Graduate **(12 out of 127, 10%)**, Wuhan University	Apr. 2021
National Scholarship, Wuhan University	Oct. 2020
Excellent Student Scholarship **(Rank: 1/32)**, Wuhan University	Oct. 2020
National Second Prize of FPGA Innovation Design Competition, China	Dec. 2019
National Second Prize of Intelligent Robot Fighting Competition, China	Oct. 2019
Excellent Student Scholarship **(Rank: 4/32)**, Wuhan University	Oct. 2019
Excellent Student Scholarship **(Rank: 8/32)**, Wuhan University	Oct. 2018
Freshman Scholarship, Wuhan University	Oct. 2017