Hui Wei

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EDUCATION

Electrical Engineering and Computer Science, University of California, Merced 2025 - Present
Ph.D. student in Computer Science *GPA: 4.0/4.0*

Courant Institute of Mathematical Sciences, New York University 2017 - 2019
M.S. in Computer Science *GPA: 3.8/4.0*

Beijing University of Posts and Telecommunications 2013 - 2017
B.Eng. in Telecommunication Engineering *GPA: 3.8/4.0*

RESEARCH INTERESTS

Machine Learning, Natural Language Processing, Large Language Models, Time Series, AIoT, AI for Health.

RESEARCH EXPERIENCE

Research Scientist Intern 05/2024 – 08/2024
PAII.Inc (Ping An Technology North America Research Institute, Sillicon Valley) *Palo Alto, CA*

- Established a rigorous evaluation framework for **LLM-as-a-Judge**, providing metrics that enhance the reliability and explainability of LLM alignment assessments.
- Contributed to developing a generalizable theoretical framework for **Reinforcement Learning from Human Feedback (RLHF)**, advancing research published as an arXiv preprint [3].
- One paper [7] was accepted by *ICLR workshop on Building Trust on LLMs and LLM applications 2025*.
- One paper [6] was accepted by *EMNLP 2025*.

Research Assistant 09/2021 – 01/2024
UMass Amherst *Amherst, MA*

- Designed an **autocorrelation-informed temporally sparse self-attention model** to address *missing data* challenges in *large-scale* longitudinal physical activity data from the *All of Us* research program.
- Developed a **variational autoencoder** for irregularly sampled ICU data with *heterogeneous output distributions*.
- Contributed to a **reconstruction-based contrastive learning** approach to enhance time series representations.
- One paper [8] was accepted by *CHIL 2024* and *ICLR workshop on Learning from Time Series for Health 2024*.
- One paper [9] was accepted by *ICLR 2024*.

Research Assistant 02/2019 – 06/2020
NYU Grossman School of Medicine *New York City, NY*

- Developed **CNN**, **LSTM**, and **Transformer** models to enhance disease onset prediction for NYU EHR data.
- Analyzed *large-scale EHR data* to evaluate diagnostic accuracy and fairness for dementia, supporting robust and equitable clinical decision-making.
- One paper [10] was accepted by the journal *Frontiers in Aging Neuroscience 2023*.

PUBLICATIONS

* indicates equal contribution

1. Dong Yoon Lee, Alyssa Weakley, **Hui Wei**, Blake Brown, Keyana Carrion, Shijia Pan. "RARR: Robust Real-World Activity Recognition with Vibration by Scavenging Near-Surface Audio Online." *ACM International Workshop on Intelligent Acoustic Systems and Applications*, **MobiCom**, 2025.
2. **Hui Wei**, Dong Yoon Lee*, Shubham Rohal*, Zhizhang Hu, Shiwei Fang, Shijia Pan. "A Survey of Foundation Models for IoT: Taxonomy and Criteria-Based Analysis." *CCF Transactions on Pervasive Computing and Interaction* (**CCF TPCI**), 2025.
3. Shenghua He*, Tian Xia*, Xuan Zhou*, **Hui Wei**. "Response-Level Rewards Are All You Need for Online Reinforcement Learning in LLMs: A Mathematical Perspective." *arXiv preprint arXiv:2506.02553* (2025).
4. Shangjie Du*, **Hui Wei***, Dong Yoon Lee, Zhizhang Hu, Shijia Pan. "Graph-Based Physics-Guided Urban PM2.5 Air Quality Imputation with Constrained Monitoring Data." *ACM Transactions on Sensor Networks* (**TOSN**), 2025.

5. **Hui Wei**, Zihao Zhang, Shenghua He, Tian Xia, Shijia Pan, and Fei Liu. "PlanGenLLMs: A Modern Survey of LLM Planning Capabilities." *The 63rd Annual Meeting of the Association for Computational Linguistics* (**ACL**), 2025. (**Oral presentation; Selected for the Senior Area Chair Highlights Award (top 1%) from 8,000+ submissions, received strong reviews (4-4-4).**)
6. Jingyang Lin, Andy Wong, Tian Xia, Shenghua He, **Hui Wei**, Mei Han, and Jiebo Luo. "Facilitating Long Context Understanding via Supervised Chain-of-Thought Reasoning." *The 2025 Conference on Empirical Methods in Natural Language Processing* (**EMNLP**), 2025.
7. **Hui Wei***, Shenghua He*, Tian Xia, Andy Wong, Jingyang Lin, Mei Han. "Systematic Evaluation of LLM-as-a-Judge in LLM Alignment Tasks: Explainable Metrics and Diverse Prompt Templates." *Building Trust on LLMs and LLM applications Workshop*, **ICLR**, 2025. (**Citations:** 50+).
8. **Hui Wei**, Maxwell A. Xu, Colin Samplawski, James M. Rehg, Santosh Kumar, Benjamin M. Marlin. "Temporally Multi-Scale Sparse Self-Attention for Physical Activity Data Imputation." *Conference on Health, Inference, and Learning* (**CHIL**), PMLR, 2024.
9. Maxwell A. Xu, Alexander Moreno, **Hui Wei**, Benjamin M. Marlin, James M. Rehg. "Retrieval-Based Reconstruction for Time-series Contrastive Learning." *The 12th International Conference on Learning Representations* (**ICLR**), 2024.
10. **Hui Wei**, Arjun V. Masurkar, and Narges Razavian. "On Gaps of Clinical Diagnosis of Dementia Subtypes: A Study of Alzheimer's Disease and Lewy Body Disease." *Frontiers in Aging Neuroscience* 15 (2023): 1149036.

TEACHING EXPERIENCE

Head Teaching Assistant, UMass Amherst 09/2024 - 12/2024
COMPSCI 485: Introduction to Natural Language Processing *Amherst, MA*
- Advised student teams on final project ideas and provided extra weekly office hours for additional support.
- Managed grading for homework, exams, and in-class exercises, and handled online student questions.

Teaching Assistant, UMass Amherst 01/2024 - 05/2024
COMPSCI 250: Introduction to Computation *Amherst, MA*
- Led weekly discussion and lab sessions, held regular office hours to support students, and graded assignments.

AWARDS AND HONORS

ACL Senior Area Chair Highlights Award (top 1% of over 8,000 paper submissions), 2025.
Student Spotlight, Neuroscience at UMass Amherst, 2023.
Merit Student Scholarship, Beijing University of Posts and Telecommunications, 2013-2017.

ACADEMIC SERVICES

Reviewer, *workshop on Building Trust in LLMs and LLM Applications*, ICLR 2025.
Reviewer, *workshop on Learning from Time Series for Health*, ICLR 2024 and NeurIPS 2022, 2025.
Reviewer, *IEEE Journal of Biomedical and Health Informatics* (JBHI) 2024.
Evaluation committee, *workshop on DATA*, Sensys & Buildsys 2022, 2023, 2024.

TECHNICAL SKILLS

Languages: Python, C/C++, Bash, LaTeX, Markdown, SQL, HTML/CSS
Libraries: PyTorch, NumPy, Matplotlib, Pandas, Scikit-Learn, Seaborn, SciPy, PyG
Tools: Linux, Git/GitHub