Zichen Wang

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Education

Washington University in St. Louis — St. Louis, MO
Ph.D. in Computer Science, advised by Chenyang Lu — *Aug. 2024 – Present*

Washington University in St. Louis — St. Louis, MO
Bachelor of Science in Computer Science, Minor in Bioinformatics and Financial Engineering — *Aug. 2019 – May 2024*

Research Interest

Deep Learning | Protein Language Model | Time-Series Data Modeling | Computer Vision

Publications

Wang, R., Wang, Z., Gao, P., Li, M., Jeong, J., Xu, Y., Lee, Y., Baum, C., Connor, L., & Lu, C. (2025). Real-time video-based human action recognition on embedded platforms. *ACM Trans. Embed. Comput. Syst.*, *24*(5s). https://doi.org/10.1145/3761795

Projects

PLM-driven Pathogenicity Prediction | *Deep Leanring, Protein Language Model* — Feb. 2025 – Present

- Develops a multi-modal protein language model (PLM) that uses both sequential and structural information of protein variants to predict their pathogenicity.
- Achieves better performance than most other PLMs in the benchmark testing.
- Validates the usefulness of software-calculated structures of protein variants compared with those Alphafold-predicted structures.

AI-Driven Predictions of Birth Outcomes | *Deep Leanring, Time-Series Data Modeling* — Dec. 2024 – Present

- Developed a multi-modal transformer-based model that uses cardiotocography (CTG) and Other intrapartum data to predict delivery modes and birth outcomes.
- Shown the effectiveness of CTG data in the prediction tasks through the ablation study.
- Demonstrates the clinical meaning of how our pipeline can predict the delivery mode in advance through the real-time simulation on the data.

Smart Kitchen | *Computer Vision, Embedded System* — June 2023 – Apr. 2025

- Developed an online video-based human action recognition (HAR) system designed to assist users with cognitive impairments to complete tasks independently.
- Deployed the system on the Nvidia Jetson Xavier.
- Identified the bottleneck of the run-time speed on the embedded system and achieved the real-time HAR on Jetson.

Technical Skills

Languages: Java, Python, C/C++, Swift, JavaScript
Frameworks: Pytorch, Transformers, Nvidia Nsight, OpenCV, Git, Docker, Linux
Research Areas: Protein Language Model, Medical Time-Series Data Modeling, Embedded System