Shenming Ji

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EDUCATION BACKGROUND

Northwestern University — Evanston, IL
Master of Science in Computer Science — *Sep. 2025 – Jun. 2027 (Expected)*

Xi'an Jiaotong-Liverpool University — Suzhou, China
Bachelor of Science in Information and Computing Science — *Sep. 2021 – Jul. 2025*
- Graduate with First Class (Honours) | GPA: 3.77/4.0

PUBLICATIONS

[1] Gefei Zhang, **Shenming Ji**, Yicao Li, Jingwei Tang, Jihong Ding, Meng Xia, Guodao Sun, Ronghua Liang, "CPVis: Evidence-based Multimodal Learning Analytics for Evaluation in Collaborative Programming" in ACM CHI 2025. https://doi.org/10.48550/arXiv.2502.17835

[2] **Shenming Ji**, Wei Wang, Jianjun Chen, Jun Qi, "EEG-TBSANet: Temporal-Spectral Fusion Network for Robust Epilepsy Diagnosis from EEG" in IEEE INDIN 2025 (Accepted)

RESEARCH EXPERIENCE

EEG-TBSANet: A Temporal-Spectral Fusion Network for Robust Epilepsy Diagnosis from EEG Signals.

Xi'an Jiaotong-Liverpool University | AI in Healthcare — Suzhou, China
Supervisor: Prof. Jun Qi — *Sep. 2024 - Jun. 2025*
- Built EEG-TBSANet integrating **TCN**, **BiLSTM**, and **Self-Attention** for robust and accurate EEG-based seizure detection.
- Achieved up to **99.40% accuracy** across diverse public datasets (CHB-MIT, Bonn, and Guinea-Bissau).
- Applied **Gaussian noise augmentation**, **focal loss**, and adaptive learning rate schedulers to enhance model generalization.
- Implemented and optimized in **PyTorch** with extensive **ablation studies** and rigorous cross-model comparisons.

Evaluating Collaborative Programming in the Classroom through Data-driven Multimodal Learning Analytics.

Texas A&M University | Human-Computer Interaction — College Station, USA
Supervisor: Prof. Meng Xia — *May. 2024 - Sep. 2024*
- Implemented **Faster-Whisper** and **Pyannote_audio** for speech recognition and diarization to analyze student collaboration.
- Used **LLM APIs (GPT-4o)** with custom prompts to classify behaviors, assess scaffolding, and evaluate submitted code.
- Applied **T-SNE** for visualization and **NMF** to quantify behavioral and cognitive engagement using LLM-derived features.
- Built an interactive **Vue**-based dashboard enabling instructors to monitor student collaboration and coding progress.

Investigating the effect of collaboration patterns on bilibili's video performance and creator's individual growth

Xi'an Jiaotong-Liverpool University | Social Computing — Suzhou, China
Supervisor: Prof. Teng Ma — *Jun. 2023 - Sep. 2023*
- Utilized Python to **web scrape** and analyze a dataset of 37k videos and 43k creators over a six-month period (Dec. 2022 - Jun. 2023).
- Applied **NetworkX** to construct a collaboration network for videos, and prepared cross-sectional data for regression analysis.
- Identified structural holes and conducted network analysis, revealing patterns through a U-shaped graph.
- Provided insights into effective collaboration strategies among Bilibili creators that contribute to successful video production.

PROJECT

Full-Stack Online Food Ordering Platform — Suzhou, China
Full-Stack Developer — *Feb. 2024 – Apr. 2024*
- Designed and implemented a responsive front-end using JavaScript, HTML5, and CSS3 under the **MVC** pattern.
- Developed and consumed **RESTful APIs** with **Spring Boot** backend and **Axios** for dynamic menu and order data exchange.
- Integrated **MySQL** for persistent order and user data, supporting authentication and session management.

SKILLS

- **Programming languages:** C/C++, Python, Java, JavaScript, HTML/CSS, SQL
- **Tools/Frameworks:** Git, Docker, React, Spring Boot, PyTorch, MySQL, MATLAB, Unity, Figma