

Junbo Wang

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Education

University of Tennessee

M.S. in Geography (GIST) GPA: 3.94/4.0 (Fully Funded)

Aug. 2025 – May. 2027 (Expected)

Knoxville, TN

China University of Geosciences

B.E. in Computer Science and technology GPA: 3.53/4.0

Sep. 2021 – Jun. 2025

Beijing, China

Publications

- [1] **Wang, J.[†]**, Tan, H.[†], Liao, B., Jiang, A., Fei, T., Huang, Q., Tu, Z., Ye, S., Kang, Y.*, “SounDiT: Geo-Contextual Soundscape-to-Landscape Generation,” IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2026.
- [2] Qiao, S., Fang, X., **Wang, J.**, Zhang, R., Zhang, R., Li, X., Kang, Y.*, “Generative AI for Thematic Analysis in a Maternal Health Study: Coding Semistructured Interviews Using Large Language Models,” Applied Psychology: Health and Well-Being, 2025.
- [3] Li, Z., Fang, J., **Wang, J.**, Cheng, X., Tan, Y., Qin, Y., “Meta-Tuner: Meta-Trained Node-Specific Transformations for Graph Few-Shot Class-Incremental Learning,” Expert Systems with Applications, 2025.
- [4] Zhou, B., Huang, X., Wang, S., Mai, G., Li, D., Wang, Z., Wu, Q., Ning, H., **Wang, J.**, Wu, Q., Jia, Y., Wang, R., Lyu, S., Tang, B., Huang, Z., “Measuring the Spatial Explicitness of GeoAI and Geospatial Foundation Models: A Systematic Review and Future Roadmap,” ISPRS Journal of Photogrammetry and Remote Sensing, 2026.

Research Experience

Multimodal Generative Modeling for Audio-to-Image Synthesis

Jul. 2024 – Feb. 2026

Austin, Texas (Remote)

- Proposed Geo-contextual Soundscape-to-Landscape generation (GeoS2L), a novel task for synthesizing geographically realistic landscape images from environmental soundscapes.
- Constructed two large-scale geo-contextual multimodal datasets, *SoundingSVI* and *SonicUrban*, pairing diverse environmental soundscapes with real-world landscape images.
- Developed *SounDiT*, a diffusion transformer (DiT)-based model that integrates environmental audio and geo-contextual scene conditioning to generate geographically coherent landscape imagery.
- Designed the *Place Similarity Score (PSS)*, a geo-contextual evaluation framework for measuring consistency between input soundscapes and generated images across element, scene, and human-perception levels.

Post-Disaster Street-View Image Generation

Mar. 2026 – Present

Knoxville, Tennessee

- Developed a multimodal generative framework to synthesize post-disaster street-view images conditioned on pre-disaster street-view imagery and post-event satellite imagery.
- Explored conditional image generation methods for modeling disaster-induced scene transformations while preserving structural realism and cross-view consistency.
- Built data processing and benchmarking pipelines for paired pre-/post-disaster street-view and overhead imagery, enabling systematic evaluation across mild, moderate, and severe damage scenarios.
- Evaluated generation quality against baseline methods in terms of visual realism, disaster impact representation, and scene-level consistency.

LLM-Based Thematic Data Analysis in a Maternal Health Study

March 2025 – April 2025

Austin, Texas (Remote)

- Designed and implemented **LLM-driven analysis pipelines** to process and structure interview transcripts.
- Developed automated API-based workflows for large-scale qualitative coding and thematic extraction.
- Applied a BERT-based evaluation framework to compare human-generated and LLM-generated codes.
- Synthesized experimental findings and translated results into publication-ready visualizations and research illustrations.

Spatiotemporal Fossil Data Analysis for Late Cretaceous Dinosaur Evolution

Oct. 2023 – April 2025

Beijing, China

- Developed a data-integration pipeline combining PBDB and Macrostrat records for large-scale spatiotemporal analysis.
- Designed temporal analysis and visualization workflows to quantify changes in fossil occurrence patterns after chronological correction.

Honors & Awards

Graduate Student Senate (GSS) Travel Award (\$700)

Mar. 2026

University of Tennessee, Knoxville

Knoxville, TN

Academic Scholarships (¥1,000)

Dec. 2022

2021 – 2022 academic year second-class scholarship

China University of Geosciences (Beijing)

Technical Skills

Programming: Python, C/C++, Java, SQL, R

AI & Machine Learning: PyTorch, TensorFlow, Transformers, Diffusion Models, Multimodal Learning, Computer Vision, Audio-Visual Learning, Large Language Models, Graph Learning

GPU & HPC: CUDA, Slurm, Linux, GPU Computing, High-Performance Computing (HPC)

Data & Scientific Computing: NumPy, Pandas, netCDF, HDF5, Git