

Chenguang Wang

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Education

John Hopkins University, Graduate Visiting Scholar	Aug 2024 – May 2025
Stony Brook University, Ph.D. Candidate in Civil Engineering GPA: 3.92/4.0	Jan 2023 – Exp. Jan 2026
Stevens Institute of Technology, M.S. Computer Science GPA: 3.88/4.0	Aug 2021 – Jan 2023
Xi'an Jiaotong University, B.S. Computer Science	Aug 2016 – June 2020

Coursework

Machine Learning: Artificial Intelligence, Data Mining, Machine Learning, Advanced Image Analysis, Natural Language Processing
Computer Science: Software Engineering, Data Structure and Algorithm, The Analysis and Design of Algorithm, Database System
Statistics: Discrete Mathematical Structure, Probability and Stochastic Process, Fundamentals of Optimization, Mathematical Logic

Research Experience

Probing the limit of Agentic Visual Reasoning in Multi-Modal LLMs May 2025 – July 2025

- Investigated agentic visual reasoning in advanced Multi-Modal LLMs such as GPT-o3 and Gemini2.5-Pro, uncovering critical shortcomings in detecting subtle visual cues within socially contextualized tasks.
- Proposed a challenging benchmark inspired by realistic social scenarios, where even the top-performing models achieved only 26% accuracy, approximately half the performance of human experts.

Multi-Agent Pipeline for Street-to-Design Image Transformation Feb 2025 – Present

- Constructed a cascading, multi-model agentic system to precisely transform street-view images into detailed roadway design visualizations, utilizing agent-generated prompts for structured image decomposition and iterative inference steps.
- Conducted the discriminator agent that leverages semantic segmentation followed by ranking based on CLIP similarity, with final judgment handled by Multi-Modal LLMs, achieving a remarkable 96% accuracy rate and enabling precise image edits unattainable through direct inference alone.

LLM-based Prediction Framework for Wildfire Evacuation Decision Aug 2024 – Feb 2025

- Proposed a behavior-model-driven RAG framework that constructs CoT prompts to guide LLMs' reasoning, integrated with a linguistically based RLHF module to accurately predict wildfire evacuation decisions.
- Implemented the framework using proprietary LLMs(e.g., GPT, Claude) via API integration, achieving an average performance improvement of 20.5% over baseline statistical models. [\[ACL'25\]](#)

Efficient Data Synthesis for Instruction Tuning on LLM Mar 2024 – Oct 2024

- Developed a human/model-free approach that efficiently augments existing data with well-designed concatenation for LLM post-training, delivering consistent performance improvements across benchmarks while reducing training costs by 80%. [\[ACL'25\]](#)
- Proposed a novel and cost-effective data augmentation approach that recycles existing supervised fine-tuning data by applying rule-based edits, enhancing the controllability of LLMs while preserving their general instruction-following capabilities. [\[NAACL'25\]](#)

LLM-Based Framework for Real-Time Extraction of Post-Disaster Social Media Information Jan 2023 – Aug 2024

- Developed a social media information retrieval framework that uses a fine-tuned RoBERTa classifier to filter posts and an ICL prompt to guide open-source LLMs (e.g., LLaMA3-8B) in extracting information, with the pipeline deployed via Docker on a Linux server.
- Designed a dynamic Truth Discovery algorithm to select reliable information from conflicting claims, contributing to the complete pipeline that reduces processing time by 95% while achieving a retrieval accuracy of 96%.

Selected Publications

Wang, C., Li, M., Chen, H., Nguyen, D., Li, D., & Zhou, T. (2024). *RuleR: Improving LLM Controllability by Rule-based Data Recycling*. [Accepted by NAACL 2025](#).

Wang, C., Chen, R., Sun, Y., Zhao, X., & Xu, S. (2025). From Perceptions to Decisions: Wildfire Evacuation Decision Prediction with Behavioral Theory-informed LLMs. [Accepted by ACL 2025](#).

Li, M., Chen, P., **Wang, C.**, Zhao, H., Liang, Y., Hou, Y., Liu, F., & Zhou, T. (2024). *Mosaic IT: Enhancing instruction tuning with data mosaics*. [Accepted by ACL 2025](#).

Li, M., **Wang, C.**, Liang, Y., Wang, X., Zhou, Y., Wu, X., & Zhou, T. (2025). *CaughtCheating: Is your MLLM a good cheating detective? Exploring the boundary of visual perception and reasoning*. *arXiv preprint arXiv:2507.00045*. [Submitted to EACL 2026](#).

Li, M., **Wang, C.**, Zhang, R., Chen, J., Gu, J., Zhou, Y., Dernoncourt, F., Zhu, W., Zhou, T., & Sun, T. (2025). *Towards visual text grounding of multimodal large language model*. *arXiv preprint arXiv:2504.04974*. [Submitted to AAAI 2026](#).

Wang, C., Engler, D., Li, X., Hou, J., Wald, D.J., Jaiswal, K. & Xu, S. (2024). Near-real-time earthquake-induced fatality estimation using crowdsourced data and large-language models. *International Journal of Disaster Risk Reduction*.

Wang, C., Liu, Y., Zhang, X., Li, X., Paramygin, V., Sheng, P., Zhao, X., & Xu, S. (2024). Scalable and rapid building damage detection after Hurricane Ian using causal Bayesian networks and InSAR imagery. *International Journal of Disaster Risk Reduction*.

Additional Information

- Research Interest:** LLMs/MLLMs fine-tuning, RAG, Reasoning, Data Synthesis, Controllability, Interpretability.
- Skills:** Python, Matlab, C/C++, Linux, git, HTML/CSS/Javascript, PyTorch, Docker, LangChain, NLP techniques and tools.
- Reviewer Service:** ACL, EMNLP, NAACL, ICLR, ICML, NeurIPS, IJDRR.
- Awards:** ECE Research Scholarship Award (2022), Provost Doctoral Fellowship (2022)