Yiyang Wang

yiyang.wang@rochester.edu | (503)703-5936 | Website | LinkedIn

Education

University of Rochester — **Rochester, NY**
Ph.D., Computer Science (Advisor: Chen Ding) — *Aug 2023 - May 2028 (Anticipated)*
Master of Science, Computer Science — *Aug 2022 - May 2023*

New York University — **New York, NY**
Tandon Bridge Program for Computer Science (Certificate of Distinction) — *Jan 2022 - Jun 2022*

Peabody Institute of Johns Hopkins University — **Baltimore, MD**
Master of Music, Composition — *Aug 2019 - May 2021*

Reed College — **Portland, OR**
Bachelor of Arts, Music (Phi Beta Kappa) — *Aug 2014 - May 2018*

Research Interests

Caching systems and performance modeling, locality theory, and locality in natural languages & large language models (LLMs) workloads.

Publications

Yiyang Wang, Chen Ding, Hangfeng He. "Ranking Human and LLM Texts Using Locality Statistics." In Findings of the Association for Computational Linguistics: EACL 2026, pages 5337–5348, Rabat, Morocco. Association for Computational Linguistics.

Yiyang Wang, Chen Ding, Leo Sciortino, and Linlin Chen. "Continuous-Time Modeling of Zipfian Workload Locality." *ACM Transactions on Modeling and Performance Evaluation of Computing Systems (TOMPECS)*, Volume 10, Issue 4. 2025.

Yiyang Wang, Chen Ding, Leo Sciortino. "Optimal Online Caching of Stochastic Workloads." (Under review. Preprint available upon request.)

Huiran Yu, Wei-Cheng Lin, **Yiyang Wang**, Zhiyao Duan. "Structure-Aware Representation Learning for Symbolic Music with Graph Neural Networks." (Under review.)

Professional and Research Experience

University of Rochester — **Rochester, NY**
Research Assistant - Systems Research Group, Department of Computer Science — *Aug 2023 - Present*

- Conduct and lead research on in-memory caching policies and stochastic workload modeling for performance prediction and optimization.
- Expand and maintain the code base for cache simulators built in Rust.
- Develop and apply locality-based metrics to improve both efficiency and interpretability of large language models (LLMs).

Research Assistant - Audio Information Research Lab, Department of Elec. & Comp. Engineering — *Jan 2023 - May 2024*

- Investigated deep learning methods for music information retrieval and interactive music generation, integrating signal processing with neural representation learning.
- Designed self-supervised variational autoencoder (VAE) and contrastive learning frameworks for musical motif embedding learning; collected a cross-genre music pattern dataset for evaluation.

NYC Music Services **New York, NY**
Contracted Software Developer *Dec 2021 - Feb 2022*
- Designed and implemented a cross-platform PDF batch-processing application with GUI for macOS and Windows, automating large-scale music engraving workflows.
- Built using Python (wxPython, pdfrw), enabling customizable layout, metadata handling, and file management for professional sheet-music production.

Additional Technical Projects

Concurrent Lease Cache 2025
- Implemented a thread-safe lease (akin to time-to-live) cache simulator in Rust, supporting concurrent access with lock-efficient data structures.
- Achieved up to 2.4x throughput improvement over the serial baseline through fine-grained hash locks and optimized synchronization.

Idiom Paraphrasing via Contrastive Learning 2023
- Fine-tuned a BART transformer to interpret idiomatic expressions by generating literal paraphrases of idiomatic sentences.
- Employed a hybrid contrastive learning framework combining random masking and idiom-literal pair supervision to enhance semantic alignment.
- Achieved improved BLEU, ROUGE, and METEOR scores, demonstrating robust generalization to unseen idioms.

Posters and Presentations

Yiyang Wang. "Time-Continuous Modeling of Zipfian Workload Locality." Poster and Presentation. *ACM SIGMETRICS Student Research Competition*, 2024.

Yiyang Wang, Joseph Jaeger, Christodoulos Benetatos, Zhiyao Duan. "An Interactive Computational System to Accompany Jazz Improvisation." Poster and Demo. Graduate Research Symposium, University of Rochester, 2023.

Teaching and Service

University of Rochester **Rochester, NY**
Graduate Teaching Assistant Coach, Teaching Center *Summer 2025 - Spring 2026*
- Trained new graduate teaching assistants in institutional policies, grading practices, and effective communication strategies.
- Led interactive training session on pedagogical methods and classroom management for STEM graduate teaching assistants.

Teaching Assistant, Department of Computer Science *Fall 2023 - Spring 2025*
- Supported instructions in: Programming Language Design & Implementation, Computer Models & Limitations, Collaborative Programming & Software Design.
- Assisted in leading workshops and review sessions, managing grading, office hours, and course logistics, and coordinating TA duties to maintain instructional quality.

Skills

Programming languages: Rust, Python, C++, C, Java, Coq, Bash, JavaScript, SQL, Lisp
ML and NLP: PyTorch, Hugging Face, vLLM, SpaCy, Fairseq, scikit-learn, WandB
Tools: Git, Pandas, Matplotlib, Numpy, Perf, Slurm