ZHEYANG XIONG

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EDUCATION

University of Wisconsin-Madison | Madison, WI   *2023 - now*
PhD student, Computer Science
Advisor: Dimitris Papailiopoulos

Rice University | Houston, TX   *2019 - 2023*
B.S. in Mathematics, B.A. in Computer Science

WORK EXPERIENCE

Part-time Student Researcher, Microsoft Research AI Frontiers Lab   *May 2025 - now*

PUBLICATION

∗ denotes equal contribution.

1. **SuperThoughts: Reasoning Tokens in Superposition**
   Zheyang Xiong, Shivam Garg∗, Max Yu∗, Vaishnavi Shrivastava, Haoyu Zhao, Anastasios Kyrillidis, Dimitris Papailiopoulos
   Preprint.

2. **Everything Everywhere All at Once: LLMs can In-Context Learn Multiple Tasks in Superposition**
   Zheyang Xiong, Ziyang Cai, John Cooper, Albert Ge, Vasilis Papageorgiou, Zack Sifakis, Angeliki Giannou, Ziqian Lin, Liu Yang, Saurabh Agarwal, Grigorios G Chrysos, Samet Oymak, Kangwook Lee, Dimitris Papailiopoulos
   *The International Conference on Machine Learning (ICML) 2025, **Spotlight**.*

3. **From Artificial Needles to Real Haystacks: Improving Retrieval Capabilities in LLMs by Fine-tuning on Synthetic Data**
   Zheyang Xiong, Vasilis Papageorgiou, Kangwook Lee, Dimitris Papailiopoulos
   International Conference on Learning Representations (ICLR) 2025.

4. **OmniEdit: Building Image Editing Generalist Models Through Specialist Supervision**
   Cong Wei∗, **Zheyang Xiong**∗, Weiming Ren, Xeron Du, Ge Zhang, Wenhu Chen,
   International Conference on Learning Representations (ICLR) 2025.

5. **Can Mamba Learn How to Learn? A Comparative Study on In-Context Learning Tasks**
   Jongho Park, Jaeseung Park, **Zheyang Xiong**, Nayoung Lee, Jaewoong Cho, Samet Oymak, Kangwook Lee, Dimitris Papailiopoulos
   International Conference on Machine Learning (ICML) 2024.

6. **Strong Lottery Ticket Hypothesis with ε–perturbation**
   Zheyang Xiong∗, Fangshuo Liao∗, Anastasios Kyrillidis
   International Conference on Artificial Intelligence and Statistics (AISTATS) 2023.