Yu Sun

PhD Student
Department of Computer Science
George Mason University

ysun23@gmu.edu
571-604-9068

EDUCATION

08/2023 - 06/2028 **George Mason University (GMU)**
- PhD of Computer Science

09/2020 - 06/2023 **University of Science and Technology of China (USTC)**
- Master of Engineering in Electronic Information

09/2016 - 06/2020 **Zhejiang University (ZJU)**
- Bachelor of Agricultural Sciences in Horticulture

RESEARCH INTEREST

- System Reliability
- GPU Architecture
- Large Language Model

PROJECTS

06/2025 - 08/2024 **Characterization of the reliability of LLMs Inference under soft errors**
- Conducted an extensive measurement study on the impact of random bitwise faults in commercial scale language models with new features such as CoT and MoE.
- Published in *SC '25,* to appear.

02/2025 - 02/2024 **Efficient Protection for Generative LLMs Inference with low overhead**
- Proposed FT2, which outperforms existing range-restriction-based methods by identifying critical layers and utilizing the information from first token generation.
- Published in *HPDC '25,* to appear.

07/2021 - 01/2023 **Track yolk granule movement in early embryos of *Caenorhabditis elegans***
- Proposed a modified U-Net-based model to detect high density granules from low SNR images.
- Published in *IEEE Journal of Selected Topics in Quantum Electronics* (JCR Q1)

PUBLICATIONS

- **[SC '25]** Y. Sun , Z. Coalson , S. Hong, Z. Zhang , B. Fang and L. YangDemystifying the Resilience of Large Language Models: An End-to-End Perspective. In the International Conference for High-Performance Computing, Networking, Storage, and Analysis (SC25), to appear.
- **[HPDC '25]** Y. Sun, Z. Zhu, C. Mulpuru, R. Gioiosa, Z. Zhang, B. Fang and L. Yang, FT2: First-Token-Inspired Online Fault Tolerance on Critical Layers for Generative Large Language Models. In the 34th International Symposium on High-Performance Parallel and Distributed Computing (HPDC '25), to appear.
- Y. Sun, R. Shi, X. Chen, J. Fang, Z. Smith* and K. Chu*, Quantification of Intra Embryonic Motions Through Label Free and Fast Imaging of Yolk Granules. *IEEE Journal of Selected Topics in Quantum Electronics.* vol. 29, no. 4: Biophotonics, pp. 1-8, July-Aug. 2023, Art no. 6800708, doi: 10.1109/JSTQE.2023.3237585.
- Shi R†, Sun Y†, Fang J, Chen X, Smith ZJ* and Chu K* (2022), Asymmetrical Illumination Enables Lipid Droplets Segmentation in *Caenorhabditis elegans* Using Epi-Illumination Dark Field Microscopy. *Front. Phys.* 10:894797. doi: 10.3389/fphy.2022.894797