


Shixun Wu

◇ Phone: 909-836-7100 ◇ Email: swu264@ucr.edu ◇  shixun404 ◇ Winston Chung Hall 459, Riverside, CA, 92507

EDUCATION

University of California, Riverside

Ph.D Candidate in Computer Science, advised by Dr. Zizhong Chen

Sep. 2022 - Present

Columbia University

M.S. in Electrical Engineering

Sep. 2020 - May 2022

Peking University

B.S. in Computer Science

Sep. 2016 - Jul. 2020

B.S. in Economics(Double Major)

WORK EXPERIENCE

- **Compute Performance Intern**, Developer Technology HPC Team, Nvidia, Santa Clara, CA, Jun. 2024 - Sep. 2024
- **Research Intern**, SWARM Project, Scientific Workflow Applications on Resilient Metasystem, Jan. 2024 - Present
- **Research Intern**, DECODE, Data-driven Exascale Control of Optically Driven Excitations in Chemical and Material Systems, UC Riverside&Lawrence Berkeley National Laboratory, Sep. 2022 - Present

FIRST-AUTHOR PUBLICATIONS

1. **[PPoPP'25] Shixun Wu**, Yujia Zhai, Jinyang Liu, Jiajun Huang, Zizhe Jian, Sheng Di, Franck Cappello, Zizhong Chen. "TurboFFT: Co-Designed High-Performance and Fault-Tolerant Fast Fourier Transform on GPUs", *ACM Symposium on Principles and Practice of Parallel Programming (PPoPP)*, 2025. [paper]
2. **[SC'24]** Jinyang Liu*, Jiannan Tian*, **Shixun Wu***, Sheng Di, Boyuan Zhang, Robert Underwood, Yafan Huang, Jiajun Huang, Kai Zhao, Guanpeng Li, Dingwen Tao, Zizhong Chen, and Franck Cappello. "cuSZ-I: High-Fidelity Error-Bounded Lossy Compression for Scientific Data on GPUs." *2024 SC24: International Conference for High Performance Computing, Networking, Storage and Analysis*. [paper]
3. **[Cluster '24] Shixun Wu***, Yitong Ding*, Yujia Zhai, Jinyang Liu, Jiajun Huang, Zizhe Jian, Huangliang Dai, Sheng Di, Bryan Wong, Zizhong Chen, and Franck Cappello. "FT K-means: A High-Performance K-means on GPU with Fault Tolerance.", *2024 IEEE International Conference on Cluster Computing (CLUSTER)*. [paper]
4. **[HPDC'23] Shixun Wu***, Yujia Zhai*, Jiajun Huang, Zizhe Jian, Zizhong Chen. "FT-GEMM: A Fault Tolerant High Performance GEMM Implementation on x86 CPUs." *The 32nd ACM International Symposium on High-Performance Parallel and Distributed Computing*, Orlando, FL, USA, June 21–23, 2023. DOI: 10.1145/3588195.3595947. [poster]
5. **[ICS'23] Shixun Wu***, Yujia Zhai*, Jinyang Liu, Jiajun Huang, Zizhe Jian, Bryan Wong, Zizhong Chen. "Anatomy of High-Performance GEMM with Online Fault Tolerance on GPUs." *The 37th ACM International Conference on Supercomputing*, Orlando, FL, USA, June 21–23, 2023. DOI: 10.1145/3577193.3593715. [paper]

OTHER PUBLICATIONS

1. **[SC'24]** Ewa Deelman, Prasanna Balaprakash, Mariam Kiran, Anirban Mandal, Krishnan Raghavan, Sheng Di, Franck Cappello, John Wu, Zizhong Chen, **Shixun Wu**, Hongwei Jin, Cong Wang, Imtiaz Mahmud, Komal Thareja, Erik Scott, Pawel Zuk, Aiden Hamade. "SWARM: Scientific Workflow Applications on Resilient Metasystem"
2. **[IPDPS'24]** Zizhe Jian, Sheng Di, Jinyang Liu, Kai Zhao, Xin Liang, Haiying Xu, Robert Underwood, **Shixun Wu**, Jiajun Huang, Zizhong Chen, and Franck Cappello. "CliZ: Optimizing Lossy Compression for Climate Datasets with Adaptive Fine-tuned Data Prediction."
3. **[SIGMOD'24]** Jinyang Liu, Sheng Di, Kai Zhao, Xin Liang, Sian Jin, Zizhe Jian, Jiajun Huang, **Shixun Wu**, Zizhong Chen, Franck Cappello. "High-performance Effective Scientific Error-bounded Lossy Compression with Auto-tuned Multi-component Interpolation." *2023 IEEE International Conference on Big Data (BigData)*
4. **[BigData'23]** Jiajun Huang, Jinyang Liu, Sheng Di, Yujia Zhai, Zizhe Jian, **Shixun Wu**, Kai Zhao, Zizhong Chen, Yanfei Guo, Franck Cappello. "Exploring Wavelet Transform Usages for Error-bounded Scientific Data Compression" *Companion of the 2023 International Conference on Management of Data*.
5. **[TSP'23]** Jeremy Johnston, Xiaoyang Liu, **Shixun Wu**, Xiaodong Wang. "A Curriculum Learning Approach to Optimization with Application to Downlink Beamforming." *IEEE Transactions on Signal Processing (2023)*.
6. **[ICLR'23]** Xiaoyang Liu, Zechu Li, **Shixun Wu**, Xiaodong Wang. "Stationary Deep Reinforcement Learning With Quantum K-Spin Hamiltonian Regularization." *ICLR 2023 Workshop on Physics for Machine Learning. 2023*

HONORS AND AWARDS

- Outstanding Teaching Award, University of California, Riverside *May, 2024*
- Distinguished Dean's Fellowship, University of California, Riverside, *Sep, 2022*