

MD HASANUR RAHMAN

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EDUCATION

University of Iowa PhD in Computer Science Advisor: Guanpeng Li	<i>2021-present</i>
University of Iowa MS in Computer Science	<i>2021-2024</i>
Bangladesh University of Engineering and Technology BSc in Computer Science and Engineering	<i>2015-2019</i>

RESEARCH INTERESTS

High Performance Computing, Reliable System Design, Data Reduction, Parallel Computing, Applied ML

PUBLICATIONS

Peer-Reviewed Publications

- **A Generic and Efficient Framework for Estimating Lossy Compressibility of Scientific Data**
Md Hasanur Rahman, Sheng Di, Guanpeng Li, Franck Cappello
IEEE International Conference on Massive Storage Systems and Technology (MSST'24)
- **DRUTO: Upper-Bounding Silent Data Corruption Vulnerability in GPU Applications**
Md Hasanur Rahman, Sheng Di, Shengjian Guo, Xiaoyi Lu, Guanpeng Li, Franck Cappello
IEEE International Parallel & Distributed Processing Symposium (IPDPS'24)
Acceptance rate: 25.0%
- **Investigating The Impact of Transient Hardware Faults on Deep Learning Neural Network Inference**
Md Hasanur Rahman, Sabuj Laskar, Guanpeng Li
Journal of Software Testing, Verification and Reliability (STVR'24)
Impact Factor: 1.267
- **A Feature-Driven Fixed-Ratio Lossy Compression Framework for Real-World Scientific Datasets**
Md Hasanur Rahman, Sheng Di, Kai Zhao, Robert Underwood, Guanpeng Li, Franck Cappello
IEEE International Conference on Data Engineering (ICDE'23)
Acceptance rate: 19.1%
- **Peppa-X: Finding Program Test Inputs to Bound Silent Data Corruption Vulnerability in HPC Applications**
Md Hasanur Rahman, Aabid Shamji, Shengjian Guo, Guanpeng Li
ACM International Conference for High-Performance Computing, Networking, Storage and Analysis (SC'21)
Acceptance rate: 23.6%

- **Significantly Improving Fixed-Ratio Compression Framework for Resource-limited Applications**
Tri Nguyen, Md Hasanur Rahman, Sheng Di, Michela Becchi
The 53rd International Conference on Parallel Processing (ICPP'24)
- **Characterizing Deep Learning Neural Network Failures between Algorithmic Inaccuracy and Transient Hardware Faults**
Sabuj Laskar, Md Hasanur Rahman, Bohan Zhang, Guanpeng Li
IEEE Pacific Rim International Symposium on Dependable Computing (PRDC'22)
Acceptance rate: 36%

Workshop Publications

- **LibPressio-Predict: Flexible and Fast Infrastructure For Inferring Compression Performance**
Robert R. Underwood, Sheng Di, Sian Jin, Md Hasanur Rahman, Arham Khan, Franck Cappello
ACM International Workshop on Data Reduction for Big Scientific Data (DRBSD-9) in Conjunction with SC'23
- **TensorFI+: A Scalable Fault Injection Framework for Modern Deep Learning Neural Networks**
Sabuj Laskar, Md Hasanur Rahman, Guanpeng Li
IEEE International Workshop on Resiliency, Security, Defences and Attacks (ISSRE-W'22)

WORK EXPERIENCES

Argonne National Laboratory <i>Visiting Student</i>	<i>2021-present</i> <i>USA</i>
Samsung Research <i>Software Engineer</i>	<i>2019-2021</i> <i>Bangladesh</i>

PROFESSIONAL SERVICE

Conference Volunteer	ICDE'23 Student Volunteer, SC'24 Student Volunteer (Will Perform)
Subreviewer	ISSRE'24, ISSRE'23, HPDC'23, DSN'23, ISSRE'22, MiddleWare'22, HPDC'22, DSN'22, SELSE'22, PRDC'21
Student Mentoring	Abdullah Naveed (2023-24), Sabuj Laskar (2022), Zhengyang He (2022)