Bo Fang

Assistant Professor | University of Texas at Arlington | bo.fang@uta.edu

Education

- Ph.D., Electrical and Computer Engineering, University of British Columbia, Canada, Feb 2020. Advisors: Professor Karthik Pattabiraman and Professor Matei Ripeanu. Thesis: Approaches for Building Error Resilient Applications.
- MASc, Electrical and Computer Engineering, University of British Columbia, Canada, May 2014. Advisors: Professor Karthik Pattabiraman and Professor Matei Ripeanu. Thesis: Error Resilience Evaluation of GPGPU Applications.
- Master's in Software Systems, University of British Columbia, Canada, 2011.
- BE, Information Security, Wuhan University, China, 2006.

Research interest

ML Systems, High-Performance Computing, Dependable Systems and Fault Tolerance Techniques, GPGPU computing, Quantum Computing.

Research Experience

Tenure-track Assistant Professor Aug. 2025 - Present
Department of Computer Science and Engineering, the University of Texas at Arlington

Computer Scientist Jan. 2022 to Aug. 2025
Pacific Northwest National Laboratory *Manager: Dr. Kevin Barker*
Ongoing projects: explore optimization techniques for quantum circuit transpilation; fault tolerance characterization and improvement for mixed-precision floating point formats and fixed-point inference, advanced techniques for resilient large-scale HPC and ML workflows, ASIC chip design and verification.

Research Associate Apr. 2020 to Dec. 2021
Pacific Northwest National Laboratory *Mentors: Dr. Sriram Krishnamoorthy, Dr. Ang Li*
- *Quantum circuit simulation*: designed and implemented a graph-based partitioning approach to achieve efficient quantum circuit simulation on large-scale systems. Designed and developed a noise model simulation for the density matrix simulator and evaluated the quantum algorithms' behaviors against various noise models. Key participant in building a quantum circuit simulator that exploits the Partitioned Global Address Space (PGAS) based SHMEM communication model and demonstrated its performance on the Summit supercomputer.
- *Fault tolerance for storage-related errors*: designed and implemented the FUSE-based fault injector to systematically introduce storage-related faults into the application level, and evaluated the error resilience of complex HPC proxy applications.

Research Intern Jun. 2018 to Nov. 2018
Pacific Northwest National Laboratory *Mentor: Dr. Sriram Krishnamoorthy*
Explored the spatial data smoothness of scientific applications and designed and implemented the BonVoision system that efficiently repairs the errors that cause memory DUEs with the neighboring data at run-time. Proposed a future research direction to employ machine learning techniques to predict the likelihood of a repair to lead to the successful execution of an application.

Research Intern Jan. 2016 to Apr. 2016
Los Alamos National Laboratory *Mentor: Dr. Nathan Debardeleben*
Investigated how an error propagated through different system layers and proposed that silent data corruptions should be discussed at each layer of the system and are confined within the goal of the approach. Initiated and explored the idea of a roll-forward recovery scheme for checkpointing/restart systems.

Research Assistant Sep. 2011 to Jan. 2020
University of British Columbia
- *Error resilient applications*: proposed comprehensive approaches to improve the effectiveness and efficiency of fault tolerance techniques for HPC applications: ePVF, a methodology that distinguishes crash-causing bits from the architecturally correct execution (ACE) bits and obtains a closer estimate of the SDC rate than PVF analysis; The roll-forward recovery and the roll-back recovery schemes and demonstrate the improvement in the overall efficiency of the C/R with two systems: LetGo (for faults affecting computational components) and BonVoision (for faults affecting DRAM memory).
- *GPU error resilience*: proposed the first instruction-level fault injection methodology and tool, GPU-Qin, to estimate and understand the error resilience of GPGPU applications. Conducted the evaluation and analysis on the error resilience characteristics of various GPU applications.

Major Awards

- Best paper runner-up at ACM International Conference on Supercomputing 2025 for the paper "BMQSim: Overcoming Memory Constraints in Quantum Circuit Simulation with a High-Fidelity Compression Framework".
- Best paper award at IEEE Cluster Computing 2022 for the paper "Efficient Hierarchical State Vector Simulation of Quantum Circuits via Acyclic Graph Partitioning".
- Honorable Mention for the 2020 ACM SIGHPC Dissertation Award, Jul. 2020. Awarded by ACM's Special Interest Group on High-performance computing for "making significant progress on protecting large-scale HPC applications against soft errors". This

award is given to the best doctoral dissertation completed in high-performance computing the previous year. One honourable mention is given each year worldwide.

- William C. Carter Ph.D. Dissertation Award in Dependability, May 2020. Awarded jointly by IEEE TC on Dependable Computing and Fault Tolerance (TCFT) and IFIP Working Group 10.4 on Dependable Computing and Fault Tolerance for " addressing the problem of transient hardware faults in high-performance computing systems". The William C. Carter Ph.D. Dissertation Award has been presented since 1997 "to recognize an individual who has made a significant contribution to the field of dependable and secure computing throughout his or her Ph.D. dissertation". One award is given each year worldwide.
- Canada NSERC Postdoctoral Fellowship, Jan. 2020 Jan. $90,000 for two years, awarded by Natural Sciences and Engineering Research Council of Canada. I am ranked 2nd in the computer science division across Canada.

Participated Projects

- **DOE, Office of Advanced Scientific Computing Research (ASCR)**
  Advanced Memory to Support Artificial Intelligence for Science
  Dr. Andres Marquez (PI), $50,000,000 2020 - 2025
- **DOE, Office of Advanced Scientific Computing Research (ASCR)**
  End-to-end co-design for performance, energy efficiency, and security in AI-enabled computational science (ENCODE)
  Dr. Robert Rallo (PI), $4,000,000 2024 - 2028
- **DOE, Early Career Research Program**
  Co-designed Quantum Many-Body Suite for Deciphering Quantum Phenomena in Complex Molecular Systems
  Dr. Bo Peng (PI), $2,500,000 2024 - 2029
- **DOE, Office of Advanced Scientific Computing Research (ASCR)**
  CoRe-CHESS: CoDesign of Resilient Cloud and HPC Ecosystems for Scientific Experiments
  Dr. Nathan Tallent (PI), $2,750,000 2023 - 2028
- **DOE, Office of Advanced Scientific Computing Research (ASCR)**
  The Quantum Science Center: A DOE Quantum Information Science Research Center
  Dr. Ang Li (PI), $2,700,000 2020 - 2025
- **DOE Laboratory Directed Research & Development (LDRD)**
  Unifying Combinatorial and Graphical Methods in Artificial Intelligence (AI)
  Dr. Stephen Young (PI), $210,000 2023 - 2024
- **DOE Laboratory Directed Research & Development (LDRD)**
  Cloud, High-Performance Computing, and Edge for Science and Security (CHESS)
  Dr. Nathan Tallent (PI), $2,400,000 2022 - 2024
- **DOE, Office of Advanced Scientific Computing Research (ASCR)**
  Center for Advanced Technology Evaluation (CENATE)
  Dr. Kevin Barker (PI), $6,000,000 2021 - 2024
- **DOE, Office of Advanced Scientific Computing Research (ASCR)**
  ComPort: Rigorous Testing Methods to Safeguard Software Porting
  Dr. Ganesh Gopalakrishnan (PI), $2,400,000 2021 - 2024
- **DOE, Office of Advanced Scientific Computing Research (ASCR)**
  Co-design of Reconfigurable Accelerators for Sparse, Irregular Computations Underlying Machine Learning and Graph Analysis
  Dr. Roberto Gioiosa (PI), $2,475,000 2019 - 2023
- **DOE, Office of Advanced Scientific Computing Research (ASCR)**
  Embedding quantum computing into many-body frameworks for strongly correlated molecular and materials systems
  Dr. Karol Kowalski (PI), $826,045 2021 - 2023
- **DOE, Laboratory Directed Research & Development (LDRD)**
  QUASAR: Quantum algorithms, software and architecture
  Dr. Sriram Krishnamoorthy (PI), $1,900,000 2019 - 2020
- **DOE, Exascale Computing Program (ECP)**
  Whole-program Adaptive Error Detection and Mitigation
  Dr. Sriram krishnamoorthy (PI), $3,685,000 2015 - 2018
- **DOE, Early Career Research Program**
  Concrete ingredients for flexible programming abstractions on exascale systems
  Dr. Sriram Krishnamoorthy (PI), $2,500,000 2013 - 2017

Other Awards

- Exceptional Contribution Award of the HPC group at PNNL 2022
- Nominated for the ACM doctoral dissertation award, Oct. 2020. 1 of 2 nominees, University of British Columbia.
- British Columbia Student Scholarship, Sep. 2019. $15,000, University of British Columbia.
- Walter C Koerner Fellowship, Aug. 2019. $5,300, University of British Columbia.
- J K Zee Memorial Fellowship, May. 2018. $8,800, University of British Columbia.

- Graduate Support Initiative, Nov. 2017. $12,000, University of British Columbia.
- Graduate Support Initiative, Nov. 2016. $5,000, University of British Columbia.
- Graduate Support Initiative, Nov. 2014 Nov. $6,000, University of British Columbia.
- First Place in Coding Competition of UBC Division, Oct. 2014. Microsoft.
- Second Place in Outstanding Annual Undergraduate, May 2005. Wuhan University.

Travel Grants

- Student Travel Grant, Jun. 2019. ACM ICS 2019.
- Student Travel Grant, Jun. 2017. ACM HPDC 2017.
- Student Travel Grant, Jun. 2016. IEEE DSN 2016.

Service

- Co-chair of FTXS workshop at SC2024 and ICPP 2025
- Co-chair of DSML workshop 2024 at DSN2024
- Co-chair of Artifact Evaluation Track at ISSRE23
- Co-chair of Classic-quantum cooperative computing workshop 2024 (at ICS24) and 2023 (at HPDC23)
- Program committee member: DATE2026, IEEE ICCD 2025, SRDS 2025, ICPP 2025, IEEE QCE 2025, 2024, 2023, IEEE ISSRE 2024, IEEE IPDPS 2024, IEEE ICCAD 2023, IEEE/ACM CCGrid 2024, 2023, ACM HPDC 2025, 2023, IEEE/IFIP International Conference on Dependable Systems and Networks (DSN) 2025, 2023, 2022,2021, 2020; IEEE international conference on High-performance computing and Communications (HPCC) 2022, 2021, 2020, The IEEE Workshop on Silicon Errors in Logic – System Effects (SELSE) 2023, 2022, 2021, 2020; Fault Tolerance for HPC at eXtreme Scales (FTXS) workshop collocated with SC 2023, 2022, 2021, 2020.
- Invited reviewers for IEEE Transactions on Parallel and Distributed Systems (TPDS), Journal of Parallel and Distributed Computing (JPDC) and IEEE Computer Architecture Letters.
- External reviewers for conferences such as The International Conference for High Performance Computing, Networking, Storage, and Analysis (SC) 2021, 2020, The ACM International Symposium on High-performance Parallel and Distributed Computing (HPDC) 2020-2014, IEEE/IFIP International Conference on Dependable Systems and Networks (DSN) 2020-2015, IEEE International Symposium on Software Reliability Engineering (ISSRE) 2016, etc.
- Student volunteer for IEEE Pacific Rim International Symposium on Dependable Computing (PRDC) 2012 and IEEE International Conference on Software Quality, Reliability, and Security (QRS) 2015.

Teaching Experience

- 2025: mentored Zachary Coalson from Oregon State University for his SULI internship at PNNL supported by DOE.
- 2023: mentored Xinyi Li from the University of Utah for her PhD internship at PNNL.
- 2023: mentored Boyuan Zhang from Indiana University for his PhD internship at PNNL
- 2022: mentored Meng Wang from UBC for his PhD internship at PNNL.
- 2015: mentored a Mitacs student from India for his entire internship at UBC.
- 2014 - 2018: teaching assistant for undergraduate and graduate courses: distributed systems, database, Java programming, fault tolerance system design

Other Experience

- Nov. 2011 - May. 2012: Mitacs-Accelerate intern at Singular Software Inc.
- Sep. 2010 - Dec. 2010: Software Engineering Intern at Alcatel-Lucent S.A.

Publications

Journal

[1] *Fault Injection for TensorFlow Applications*, Niranjhana Narayanan, Zitao Chen, **Bo Fang**, Guanpeng Li, Karthik Pattabiraman, Nathan DeBardeleben, IEEE Transactions on Dependable and Secure Computing (TDSC). accepted May 2022.

[2] *Improving the Accuracy of IR-level Fault Injection*, Lucas Palazzi, Guanpeng Li, **Bo Fang**, and Karthik Pattabiraman, IEEE Transactions on Dependable and Secure Computing (TDSC). doi: 10.1109/TDSC.2020.2980273.

[3] *A Systematic Methodology for Evaluating the Error Resilience of GPGPU Applications*, **Bo Fang**, Karthik Pattabiraman, Matei Ripeanu, and Sudhanva Gurumurth, in the IEEE Transactions on Parallel and Distributed Systems (TPDS). vol. 27, no. 12, pp. 3397-3411, 1 Dec. 2016, doi: 10.1109/TPDS.2016.2517633.

Conference

[4] *Demystifying the Resilience of Large Language Models: An End-to-End Perspective*, Yu Sun, Zachary Coalson, Shiyang Chen, Hang Liu, Zhao Zhang, Sanghyun Hong, **Bo Fang**, Lishan Yang, the International Conference for High Performance Computing, Networking, Storage and Analysis (SC 2025)

[5] *QDockBench: A Protein-Ligand Docking Benchmark on Utility-Level Quantum Computers*, Yuqi Zhang, Yuxin Yang, Cheng-Chang Lu, Yao Wan, Weiwen Jiang, Feixiong Cheng, **Bo Fang**, Qiang Guan, the International Conference for High Performance Computing, Networking, Storage and Analysis (SC 2025)

[6] *Can Large Language Models Understand Intermediate Representations in Compilers?*, Hailong Jiang, Jianfeng Zhu, Yao Wang, **Bo Fang**, Hongyu Zhang, Ruoming Jin, Qiang Guan, The International Conference on Machine Learning (ICML 2025)

[7] *FT2: First-Token-Inspired Online Fault Tolerance on Critical Layers for Generative Large Language Models*, Yu Sun, Zhu Zhu, Cherish Mulpuru, Roberto Gioiosa, Zhao Zhang, **Bo Fang**, Lishan Yang, ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC 2025)

[8] *BMQSim: Overcoming Memory Constraints in Quantum Circuit Simulation with a High-Fidelity Compression Framework*, Boyuan Zhang, **Bo Fang**, Fanjiang Ye, Luanzheng Guo, Fengguang Song, Tallent Nathan, Dingwen Tao, ACM International Conference on Supercomputing (ICS 2025, **Best Paper Runner-up**)

[9] *Be Aware of Metadata Corruption in Parallel File System: It Can Be Silent and Catastrophic*, Saisha Kamat, Mai Zheng, **Bo Fang**, Dong Dai, the 39th IEEE International Parallel & Distributed Processing Symposium (IPDPS 2025)

[10] *ATTNChecker: Highly-Optimized Fault Tolerant Attention for Large Language Model Training*, Yuhang Liang, **Bo Fang**, Xinyi Li, Jie Ren, Ang Li, Jieyang Chen, the 30th ACM SIGPLAN Annual Symposium on Principles and Practice of Parallel Programming (PPoPP 2025)

[11] *Investigating Resilience of Loops in HPC Programs: A Semantic Approach with LLMs*, Hailong Jiang, Jianfeng Zhu, **Bo Fang**, Chao Chen and Qiang Guan, 2024 IEEE High Performance Extreme Computing Conference (HPEC)

[12] *PQML: Enabling the Predictive Reproducibility on NISQ Machines for Quantum ML Applications*, Priyabrata Senapati, Samuel Yen-Chi Chen, **Bo Fang**, Tushar M. Athawale, Ang Li, Weiwen Jiang, Cheng Chang Lu, Qiang Guan, Proceedings of the IEEE International Conference on Quantum Computing and Engineering, QCE24

[13] *Understanding Mixed Precision GEMM with MPGemmFI: Insights into Fault Resilience*, **Bo Fang**, Xinyi Li, Harvey Dam, Cheng Tan, Siva Kumar Sastry Hari, Timothy Tsai, Ignacio Laguna, Dingwen Tao, Ganesh Gopalakrishnan, Prashant Nair, Kevin Barker, Ang Li, IEEE Cluster 2024

[14] *HAPPA: A Modular Platform for HPC Application Resilience Analysis with LLMs Embedded*, Hailong Jiang, Jianfeng Zhu, **Bo Fang**, Kevin Barker, Chao Chen, Ruoming Jin, Qiang Guan, The 43rd International Symposium on Reliable Distributed Systems (SRDS2024)

[15] *Privacy-Preserving Artificial Intelligence on Edge Devices: A Homomorphic Encryption Approach*, Khan M., **B. Fang**, G. Cimino, S. Cirillo, D. Zhao, and L. Yang, In International Conference on Web Services 2024

[16] *A Testing-Guided Approach to Characterize NVIDIA and AMD Matrix Accelerator Numerics* Xinyi Li, Ang Li, **Bo Fang**, Ignacio Laguna, Ganesh Gopalakrishnan, 24th IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGRID24)

[17] *Red-QAOA: Efficient Variational Optimization through Circuit Reduction*, Meng Wang, **Bo Fang**, Ang Li, and Prashant J. Nair, In Proceedings of the 29th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS) 2024

[18] *Towards Redefining the Reproducibility in Quantum Computing: A Data Analysis Approach on NISQ Devices*, Priyabrata Senapati, Zhepeng Wang, Weiwen Jiang, Travis Humble, **Bo Fang**, Shuai Xu and Qiang Guan Proceedings of the IEEE International Conference on Quantum Computing and Engineering, QCE23

[19] *AMRIC: A Novel In Situ Lossy Compression Framework for Efficient I/O in Adaptive Mesh Refinement Applications*, Daoce Wang, Jesus Pulido, Pascal Grosset, Jiannan Tian, Sian Jin, Houjun Tang, Jean Sexton, Sheng Di, Zarija Lukić, Kai Zhao, **Bo Fang**, Franck Cappello, James Ahrens, and Dingwen Tao Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis (SC), Denver, CO, USA, Nov 12-17, 2023. Acceptance Rate: 24%

[20] *Practical GPU Floating-Point Exception Detection, Diagnosis and Repair*, Xinyi Li, Ignacio Laguna, **Bo Fang**, Katarzyna Swirydowicz, Ang Li and Ganesh Gopalakrishnan, ACM International Symposium on High-Performance Parallel and Distributed Computing, Orlando, FL, USA. June 16-23, 2023

[21] *MARS: Malleable Actor-Critic Reinforcement Learning Scheduler*, Betis Baheri, Qiang Guan, Jacob Tronge, **Bo Fang**, Ang Li, Vipin Chaudhary 2022 IEEE International Performance, Computing, and Communications Conference (IPCCC).

[22] *Efficient Hierarchical State Vector Simulation of Quantum Circuits via Acyclic Graph Partitioning*, **Bo Fang***, M. Yusuf Özkaya*,Ang Li,Ümit V. Çatalyürek, Sriram Krishnamoorthy, IEEE Cluster 2022 (* contributed equally) **Best paper award**.

[23] *Pinpointing the System Reliability Degradation in NISQ Machines*, Qiang Guan, Betis Baheri, Zixuan Xu, Ying Mao, Vipin Chaudhary, Shuai Xu and **Bo Fang**, 2022 IEEE International Conference on Quantum Computing and Engineering (QCE22).

[24] *ASAP - Automatic Synthesis of Area-Efficient and Precision-Aware CGRA*, Cheng Tan, Thierry Tambe, Jeff Zhang, **Bo Fang**, Tong Geng, Gu-Yeon Wei, David Brooks, Antonino Tumeo, Ganesh Gopalakrishnan, Ang Li, International Conference on Supercomputing. Jun 27-30, 2022 (Accepted).

[25] *A Hybrid System for Learning Classical Data in Quantum States*, Samuel A. Stein, Betis Baheri, Ray Marie Tischio, Yiwen Chen, Ying Mao, Qiang Guan, Ang Li, **Bo Fang**, In IEEE 34th International Performance Computing and Communications Conference (IPCCC), 2021 (acceptance rate: 29%).

[26] *SV-Sim: Scalable PGAS-based State Vector Simulation of Quantum Circuits.*, Ang Li, **Bo Fang**, Christopher Granade, Guen Prawiroatmodjo, Bettina Heim, Martin Roetteler and Sriram Krishnamoorthy, The 2021 International Conference for High Performance Computing, Networking, Storage and Analysis (SC), 2021 (acceptance rate: TBA).

[27] *QuGAN: A generative adversarial network through quantum states*, Samuel A Stein, Betis Baheri, Ray Marie Tischio, Ying Mao, Qiang Guan, Ang Li, **Bo Fang**, Shuai Xu, IEEE International Conference on Quantum Computing and Engineering (QEC), 2021.

[28] *Characterizing Impacts of Storage Faults on HPC Applications: A Methodology and Insights*, **Bo Fang***, Daoce Wang*, Sian Jin, Quincey Koziol, Zhao Zhang, Qiang Guan, Suren Byna, Sriram Krishnamoorthy, Dingwen Tao, IEEE Cluster, 2021 (acceptance rate: 29%) (* contributed equally).

[29] *TensorFlowFI: A Flexible Fault Injection Framework for TensorFlow Applications*, Zitao Chen, Niranjhana Narayanan, **Bo Fang**, Guanpeng Li, Karthik Pattabiraman, Nathan DeBardeleben , IEEE International Symposium on Software Reliability Engineering (ISSRE), 2020 (acceptance rate: 25.6%).

[30] *Chaser: An Enhanced Fault Injection Tool for Tracing Soft Errors in MPI Applications*, Qiang Guan, Xunchao Hu,Terence Grove, **Bo Fang**, Hailong Jiang, Heng Yin, Nathan DeBardeleben , 50th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN) 2020, (acceptance rate: 16.5%).

[31] *A Tale of Two Injectors: End-to-End Comparison of IR-level and Assembly-Level Fault Injection*, Lucas Palazzi, Guanpeng Li, **Bo Fang**, and Karthik Pattabiraman , IEEE International Symposium on Software Reliability Engineering (ISSRE), 2019 (acceptance

rate: 31.4%).

[32] *BonVoision: Leveraging Spatial Data Smoothness for Recovery from Memory Soft Errors*, **Bo Fang**, Karthik Pattabiraman, Matei Ripeanu, Sriram Krishnamoorthy, ACM International Conference on Supercomputing (ICS), 2019 (acceptance rate: 23.2%).

[33] *LetGo: A Lightweight Continuous Framework for HPC Applications upon Failures*, **Bo Fang**, Qiang Guan, Nathan Debardeleben, Karthik Pattabiraman, Matei Ripeanu, The ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC), 2017 (acceptance rate 18%).

[34] *ePVF: An Enhanced Program Vulnerability Factor Methodology for Cross-Layer Resilience Analysis*, **Bo Fang**, Qining Lu, Karthik Pattabiraman, Matei Ripeanu and Sudhanva Gurumurthi, Proceedings of the IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), 2016, (acceptance rate 21%).

[35] *GPU-Qin: A Methodology for Evaluating the Error Resilience of GPGPU Applications*, **Bo Fang**, Karthik Pattabiraman, Matei Ripeanu and Sudhanva Gurumurthi, Proceedings of the IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS), 2014, (acceptance rate 31%).

[36] *GPUS: Combining high-performance with high-reliability*, L. Bautista Gomez, F. Cappello, L. Carro, N.DeBardeleben, **B. Fang**, S. Gurumurthi, K. Pattabiraman, P. Rech, M. Sonza Reorda, Embedded tutorial paper (invited), Proceedings of the International Symposium on Design Automation and Test in Europe (DATE), 2014 (invited paper).

Workshop, poster and abstract

[37] *Design and Implementation of the Quantum Cloud Simulation Framework*, Waylon Luo, Betis Baheri, **Bo Fang** and Qiang Guan, NSF workshop on Quantum Operating Systems and Real-Time Control (QuantumOS 2024)

[38] *MEMQSim: Highly Memory-Efficient and Modularized Quantum State-Vector Simulation*, Boyuan Zhang, **Bo Fang**, Qiang Guan, Dingwen Tao, the Fourth International Workshop on Quantum Computing Software, SC23.

[39] *Understanding and Predicting Cross-Application I/O Interference in HPC Storage Systems*, Chris Egersdoerfer, Md. Hasanur Rashid, Dong Dai, **Bo Fang**, and Tallent Nathan, Parallel Data Systems Workshop 24' (co-located at SC24)

[40] *Towards Precision-Aware Fault -olerance Approaches for Mixed-Precision Applications*, **Bo Fang**, Hari Siva, Timonthy Tsai, Xinyi Li, Ganesh Gopalakrishnan, Ignacio Laguna, Kevin Barker, Ang Li, FTXS 2022: Workshop on Fault Tolerance for HPC at eXtreme Scale (co-located at SC22).

[41] *Visual Analysis on The Resilience of HPC Applications Using Control-Flow Graph*, Hailong Jiang, Shaolun Ruan, **Bo Fang**, Kevin Barker, Ang Li, Yong Wang, Qiang Guan, International Conference for High Performance Computing, Networking, Storage, and Analysis (SC22)

[42] *Towards Predicting the Impact of Roll-Forward Failure Recovery for HPC Applications*, **Bo Fang**, Jieyang Chen, Karthik Pattabiraman, Matei Ripeanu, Sriram Krishnamoorthy, the 49th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), 2019 Fast abstract 2 pages.

[43] *SDC is in the Eye of the Beholder: A Survey and Preliminary Study*, **Bo Fang**, Panruo Wu, Qiang Guan, Nathan Debardeleben, Laura Monroe, Sean Blanchard, Zhizong Chen, Karthik Pattabiraman, Matei Ripeanu, 3rd IEEE International Workshop on Reliability and Security Data Analysis (RSDA) co-located with DSN 2016, 6 pages.

[44] *Evaluating the Error Resilience of Parallel Programs*, **Bo Fang**, Karthik Pattabiraman, Matei Ripeanu and Sudhanva Gurumurthi, Workshop on Fault Tolerance for High-Performance at Extreme Scale (FTXS) in conjunction with DSN 2014, 6 pages.

[45] *Towards Building Error Resilient GPGPU Applications*, **Bo Fang**, Jiesheng Wei, Karthik Pattabiraman, Matei Ripeanu, 3rd IEEE Workshop on Resilient Architecture (WRA) in conjunction with MICRO 2012, 6 pages.

[46] *Evaluating Error Resiliency of GPGPU Applications*, **Bo Fang**, Jiesheng Wei, Karthik Pattabiraman, Matei Ripeanu, High Performance Computing, Networking, Storage and Analysis (SC), 2012 poster.