Chao Chen

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Objective

I am looking for full-time job position on building computing systems

Skills

C/C++, Python, LLVM, MPI/OpenMP, LaTeX, Scripts, Assembly, Reverse Engineering, Machine Learning (Caffe, MXNet), OpenCV, Hadoop, MapReduce.

Education

2014/09–Present	**Ph.D.** in Computer Science, Georgia Institute of Technology	USA
2008/09–2011/06	**Master** in Computer Science, Hunan University	China
2004/09–2008/06	**BS** in Computer Science, Hunan University	China

Experience

2016/05–2016/08 **Research Intern at VMWare CTO Office**
Topic: Photon platform for container-based high performance computing. Design and implement a framework to spawn/create virtual clusters based on the container technology.
Manager: Josh Simons, **Mentor:** Na Zhang

2013/05–2013/12 **Research Intern at New Mexico Consortium/Los Alamos National Lab**
Topic: Active burst-buffer nodes for data-intensive computing. Design and implement a framework to explore compute power in burst-buffer nodes (in I/O path) on Supercomputers to mitigate I/O overheads.
Manager/Mentor: Michael Lang

2010/05–2010/08 **Intern at Motorola Mobility Technologies (China) Co., Ltd**
Linux Driver Development.
Manager/Mentor: Ying Fan

Projects

2015/05 – Present **Resilience for large-scale HPC systems**
Transient faults are becoming a big threaten to modern scientific applications running on large-scale supercomputers. They could lead to incorrect outputs (SDCs), or crash the execution of applications. In this project, we are to explore lightweight and efficient mechanisms to detect SDCs and repair the failures online based on program analysis.

2013/05 – 2013/12 **Active burst-buffer**
The project investigates the computing resources of burst-buffer nodes on modern HPC systems (Supercomputers) for data analysis or visualization to mitigate the I/O overheads.

2008/05 – 2010/06 **Autonomous Vehicle**
In this project, we built an intelligent vehicle prototype from the scratch, including low level control system (embedded system), computer vision based road and traffic sign detection, silicon radar based obstacle detection and route planning. I was focusing on building road and traffic sign detection system.

Publications

1. [**SC19**] **CARE: Compiler-assisted Recovery from Soft Failures (to appear) (Best Student Paper Finalist)**
   Chao Chen, Greg Eisenhauer, Santosh Pande and Qiang Guan
   In International Conference for High Performance Computing, Networking, Storage, and Analysis.
   Denver, CO, Nov, 2019.

2. [**HPDC18**] **LADR: Low-cost Application-level Detector for Reducing Silent Output Corruptions**
   Chao Chen, Greg Eisenhauer, Matthew Wolf and Santosh Pande
   In ACM International Symposium on High-Performance Parallel and Distributed Computing.
   Tempe, Arizona, Jun, 2018.

3. [**NAS16**] **Active Burst-Buffer: In-Transit Processing Integrated into Hierarchical Storage (Best Paper Award)**
   Chao Chen, Michael Lang, Latchesar Lonkov and Yong Chen
   In 11th IEEE International Conference on Networking, Architecture, and Storage.
   Long Bench, CA, Aug, 2016.

4. [**ISPA16**] **Rethinking High Performance Computing System Architecture for Scientific Big Data Applications (Best Paper Award)**
   Yong Chen, **Chao Chen**, Yanlong Yin, Xianhe Sun, Rajeev Thakur and William Gropp
   In 14th IEEE International Symposium on Parallel and Distributed Processing with Applications.
   Tianjin, China, Aug, 2016.

5. [**BigData13**] **Multilevel Active Storage for Big Data Applications in High Performance Computing (short paper)**
   Chao Chen, Michael Lang and Yong Chen
   In The 2013 IEEE International Conference on Big Data.
   Santa Clara, CA, Oct, 2013.

6. [**Cluster12**] **A Decoupled Execution Paradigm for Data-Intensive High-End Computing**
   Yong Chen, **Chao Chen**, Xian-He Sun, William D. Gropp, and Rajeev Thakur
   In International Conference on Cluster Computing.
   Beijing, China, Sep, 2012.

7. [**Cluster12**] **DOSAS:Mitigating the Resource Contention in Active Storage Systems**
   Chao Chen, Yong Chen and Philip C. Roth
   In International Conference on Cluster Computing.
   Beijing, China, Sep, 2012.

8. [**ICPP12**] **Dynamic Active Storage for High Performance I/O**
   Chao Chen and Yong Chen
   In 41st International Conference on Parallel Processing.
   Pittsburgh, PA, Sep, 2012.

Research Funding

- National Science Foundation (China), "Study on storage system optimization based on logical and physical I/O information", RMB 230,000 (Co-PI, 01/14 - 12/16).

Achievements

- Student Travel Grant from **OSDI**, 2014.
- Student Travel Grant from **FAST**, 2014.
- **Champion** of The Future Challenge: Intelligent Vehicles and Beyond Contest (**Team**). By **National Science Foundation (China)**, 2009.
- **First Prize** of National Undergraduate Electronic Design Contest-Embedded System Design Invitational Contest (**Team**). By **Intel**, **Ministry of Education (China)**, and **Ministry of Industry and Information Technology (China)**, 2008.
- first-class scholarships (2015, 2017, 2018) and second-class scholarship (2016). By **Hunan University**.