

Song Huang | Curriculum Vitae

Department of Computer Science and Engineering – University of North Texas
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Education

- **University of North Texas** **Denton, TX**
Ph.D. candidate in Computer Science and Engineering, GPA:4.0 2013–present
- **Texas A&M University-Commerce** **Commerce, TX**
Master of Science in Computer Science, GPA:4.0 2011–2013
- **Guangdong University of Technology** **Guangzhou, China**
Bachelor of Engineering in Network Engineering 2002–2006

Employment

Internship Experience.....

- **Cisco Systems, Inc** **Research Triangle Park, North Carolina**
Research Intern June 2016–August 2016
Mentor: Zhiang Deng
Worked on the failure analysis and prediction of Software-Defined Networking in cloud environment.
 - Initialized the failure analysis and prediction project, and designed the architecture of the framework.
 - Compared existing solutions for quantifying importance of node, and developed new models for cloud
 - Identified the impacted network entities when failure occurs in the cloud
- **Ultra-Scale Research Center, Los Alamos National Laboratory** **Los Alamos, New Mexico**
Research Student June 2015–December 2015
Mentor: Michale Lang and Scott Pakin
Worked on power and energy efficiency on large-scale computer systems, power and energy measurement
 - Characterized the power and energy consumption on the HPC platform with new generation CPU processor.
 - Measured the power and energy consumption of HPC benchmarks written by Legion programming system.

Professional Experience.....

- **Guangdong Century Jiahua Trading Co., Ltd** **Guangzhou, China**
IT Leader July 2008–December 2010
Led a team to develop and maintain the network and website publishing system.
 - Coordinated and supported a team to develop a website system.
 - Established and maintained the physical network system
 - Designed and implemented the Internet business platform.
- **TWO(Guangzhou) IT Co., Ltd** **Guangzhou, China**
Software Developer July 2006–July 2008
Developed ERP software for construction management.
 - Requirement analysis, communicated with the clients in Germany for the software requirements.
 - Software design, including the software low level design and high level design.
 - Software implementation, coding and documentation.
 - Software testing: cross testing, unit testing and integrated testing.

School Employment.....

- **University of North Texas** **Denton, TX**
Research Assistant / Teaching Assistant *August 2013–present*
Mentor: Dr. Song Fu
Taught C/C++ programming in the lab, and assist students with finishing their assignments and projects. Work on the research projects under supervision of advisor. These projects include:
 - Disk failure analysis and prediction. Using statistical learning methods to model and predict disk failures.
 - Software-defined networking failure analysis. Lead Master's students to analyze network failure and impact.
 - Power efficiency on large-scale computer systems. Characterize and optimize power and energy on HPC.
- **Texas A&M University-Commerce** **Commerce, TX**
Graduate Assistant *May 2011–August 2013*
Mentor: Dr. Daniel Creider
Taught C/C++ programming and data structure in the lab, assisted students with their projects.

Technical Skills

- **Programming Languages: Proficient:**C/C++, Python, **Familiar with:** JAVA
- **Data Science:** Python/Scalar with Spark, R Programming, MATLAB
- **High Performance Computing:** Parallel Programming with MPI and OpenMP, CUDA
- **Software Engineering:** CMM 3, Design Pattern
- **Others:** Hadoop Ecosystem, PostgreSQL, MongoDB

Publications

1. **Song Huang**, Zhiang Deng, Song Fu, "Quantifying Entity Criticality for Fault Impact Analysis and Dependability Enhancement in Software-Defined Networks ", *35th IEEE International Performance Computing and Communications Conference(IPCCC)*. Las Vegas, December 2016.
2. **Song Huang**, Song Fu, Scott Pakin and Michael Lang, "Characterizing Power and Energy Efficiency of Legion Runtime and Applications: An Early Experience", *IEEE International Green and Sustainable Computing Conference (IGSC)*, November 2016.
3. **Song Huang**, Song Fu, Quan Zhang, Weisong Shi, "Characterizing Disk Failures with Quantified Disk Degradation Signatures: An Early Experience", in *Proc. of IEEE International Symposium on Workload Characterization (IISWC)*, 10 pages, October 2015.
4. **Song Huang**, Song Fu, Nathan DeBardleben, Qiang Guan, and Chengzhong Xu, "Differentiated Failure Remediation with Action Selection for Resilient Computing", in *Proc. of the 21st IEEE/IFIP International Symposium on Dependable Computing (PRDC)*, 10 pages, November 2015.
5. **Song Huang**, Michael Lang, Scott Pakin, and Song Fu, "Measurement and Characterization of Haswell Power and Energy Consumption", in *Proceedings of the 3rd International Workshop on Energy Efficient Supercomputing (E2SC '15)*, in conjunction of SuperComputing, November, 2015.
6. Xiajun Wang, **Song Huang**, Song Fu and Krishna Kavi, "Characterizing Workload of Web Applications on Virtualized Servers", in *Proceedings of the 4th Workshop on Big Data Benchmarks, Performance Optimization, and Emerging Hardware in conjunction with ASPLOS*, March 2014.
7. Xiajun Wang, **Song Huang**, Song Fu and Krishna Kavi, "Characterizing Workload of Web Applications on Virtualized Servers", *Big Data Benchmarks, Performance Optimization, and Emerging Hardware*, pp 98-108, Springer, November 2014.

Activities and Awards

- Student Volunteer at IEEE/ACM SC conference, November 15th - 20th, 2015

- College of Engineering (CENG) Travel Grant, UNT, November 2015, December 2016
- College of Engineering Graduate Student Scholarship, UNT, 2014 - 2015
- Toulouse Graduate School Graduate Assistantship Teaching Scholarship, 2013 - 2014
- CyberQ Consulting Company: CMM3 Completion Certificate, March 2008
- Guangdong University of Technology: Outstanding Undergraduate Student, 2006
- Guangdong University of Technology: Outstanding Performance/Outstanding Student, 2002-2005