Dr. SHENG DI

Post-doctor Researcher of Argonne National Laboratory (USA)

Office number: (+1) 630-252-1520

Email: disheng222@gmail.com , sdi1@anl.gov

Home page: http://www.mcs.anl.gov/~shdi

Summary (a brief cover letter)

- I received my Ph.D degree from The University of Hong Kong in Nov. 2011. Now, I am a post-doctor researcher, affiliated by Argonne National Laboratory (Lemont, USA).
- With 10-year successful experience in developing distributed computing projects (including Cloud, HPC/Grid, P2P) via Java, C, Fortran, and Bash shell, my strengths include solid theoretical analysis, system design and development and optimization.
- During past 10 years, I studied broad research topics, including data analysis and fault tolerance in High Performance Computing (HPC), resource discovery in Grid computing, P2P and Cloud computing, analysis and prediction of Google workload based on Google trace, optimization of resource allocation, virtual machine migration over WAN, case-based reasoning via Mapreduce, etc.
- My Ph.D thesis is focused on the design of optimal algorithm for cloud resource allocation, theoretical analysis, and system implementation. I designed an optimal algorithm via convex-optimization based on the divisible-resource isolation technology and proved its optimality approximation upper-bound with possible inaccurate information aggregated, as compared to the optimal result with accurate information.
- I have 40+ refereed journal and conference papers (including TPDS, TC, TCC, JPDC, SC'XY, IPDPS, HPDC, ICPP, CLUSTER, IWQoS, CCGrid, HiPC, Grid, CLOUD, UCC, and so on).
- My recent work is focused on fault tolerance and optimization of Cloud computing environment and HPC environment.

Research Interests

- Detection of Silent Data Corruption (SDC) for exascale HPC applications
- Fast In-situ High Performance Computing Exascale Data Compression
- Characterization and Analysis of Failures, Errors, Faults for Supercomputing Environment
- Optimization of distributed resource discovery for Cloud systems, P2P architecture, and self-organizing architecture (Theory and Practical System)
- Optimization of fault tolerance performance for Cloud systems and HPC environment with Checkpoint-Restart mechanism
- Optimization of resource allocation for Cloud systems and HPC environment (Theory and Practical System)
- Performance/Workload modeling and prediction for Cloud Systems (e.g., Google cluster) and HPC environment

Education and Research Experiences

- 2014, June ~ Now, Post-doctor Researcher, Argonne National Laboratory (USA)
- 2011, Dec. ~ 2014, May, Post-doctor Researcher, INRIA (France)
- 2007~2011, Nov. Ph.D, The University of Hong Kong, Hong Kong, China
- 2004~2007, Mphil/Master degree, Department of Computer Science, Huazhong University of Science and Technology, Wuhan, China
- 2000-2004, B.S., Computer Science, South-Central University for Nationalities, China

Refereed Journal Publications

1. Song Wu, Yihong Wang, Wei Luo, **Sheng Di**, Haibao Chen, Xiaolin Xu, Hai Jin, and Ran Zheng, "ACStor: Optimizing Access Performance of Virtual Disk Images in Clouds," under review by ACM transactions on Parallel Computing (***ACM TOPC***), 2016.
2. Xuanhua Shi, Junling Liang, Xuan Luo, **Sheng Di**, Bingsheng He, Lu Lu, Hai Jin, "Frog: Asynchronous Graph Processing on GPU with Hybrid Coloring Model," under review by IEEE Transactions on Knowledge and Data Engineering (***IEEE TKDE***), 2016.
3. **Sheng Di**, Yves Robert, Frédéric Vivien, Franck Cappello, "Towards Optimal Online Checkpoint Solution under A Two-Level HPC Checkpoint Model, " to appear in IEEE Transaction on Parallel and Distributed Systems (***IEEE TPDS***), 2016.
4. **Sheng Di**, Franck Cappello, "Adaptive Impact-Driven Detection of Silent Data Corruption for HPC Applications, " to appear in IEEE Transaction on Parallel and Distributed Systems (***IEEE TPDS***), 2015.
5. Song Wu, Haibao Chen, **Sheng Di**, Bingbing Zhou, Zhenjiang Xie, Hai Jin, Xuanhua Shi,"Synchronization-Aware Scheduling for Virtual Clusters in Cloud," in IEEE Transaction on Parallel and Distributed Systems (***IEEE TPDS***), 2014.
6. Hai Jin, Xinhou Wang, Song Wu, **Sheng Di**, Xuanhua Shi, "Towards Optimized Fine-Grained Pricing of IaaS Platform", in IEEE Transactions on Cloud Computing (***IEEE TCC***), 2014.
7. **Sheng Di**, Franck Cappello, "GloudSim: Google Trace based Cloud Simulator with Virtual Machines, " in Journal of Software – Practice and Experience (***Wiley SPE***), 2014.
8. **Sheng Di**, Derrick Kondo, and Franck Cappello, "Characterizing and Modeling Cloud Applications/Jobs on a Google Data Center," in Journal of Supercomputing (***springer JS***), 69(1), pp. 139-160, 2014. DOI 10.1007/s11227-014-1131-z
9. **Sheng Di**, Derrick Kondo, and Cho-Li Wang, "Optimization of Composite Cloud Service Processing with Virtual Machines," in IEEE Transactions on Computers (***IEEE TC***), 2014.
10. **Sheng Di**, Derrick Kondo, and Walfredo Cirne, "Google Hostload Prediction based on Bayesian Model with Optimized Feature Combination," in Journal of Parallel Distributed Computing (***elsevier JPDC***), 74(1): 1820-1832, 2014.
11. **Sheng Di** and Cho-Li Wang, "Error-tolerant Resource Allocation and Payment Minimization for Cloud System," in IEEE Transactions on Parallel and Distributed Systems **(*IEEE TPDS*)**, 24(6): 1097-1106, 2013.
12. **Sheng Di**, Cho-Li Wang, "Dynamic Optimization of Multi-Attribute Resource Allocation in Self-Organizing Clouds," in IEEE Transactions on Parallel and Distributed Systems **(*IEEE TPDS*)**, 2012, http://doi.ieeecomputersociety.org/10.1109/TPDS.2013.144.

13. **Sheng Di**, Cho-Li Wang, Franck Cappello, “Adaptive Algorithm for Minimizing Cloud Task Length with Load Prediction Errors,” in IEEE Transactions on Cloud Computing (***IEEE TCC***), pp. 194-207, 2013.
14. **Sheng Di** and Cho-Li Wang, “Decentralized Proactive Resource Allocation for Maximizing Throughput of P2P Grid,” in Journal of Parallel Distributed Computing (***elsevier JPDC***), doi:10.1016/j.jpdc.2011.10.010, available online 4 Nov. 2011.
15. **Sheng Di**, Cho-Li Wang, and Ling Chen, “Ex-post Efficient Resource Allocation for Self-organizing Cloud”, in Journal of Computers and Electrical Engineering (***elsevier JCEE***), 2013, http://dx.doi.org/10.1016/j.compeleceng.2012.12.018.
16. Yinfeng Wang, Hao Liu, **Sheng Di** and Haoyu Hu, “A Parallel Index Mechanism for Large Scale High Dimentional Data,” in Journal of Huazhong University of Science and Technology (Nature Science Edition), June, 2011, 39(1), in Chinese.

Refereed Conference Publications

17. Eduardo Berrocal, Leonardo Bautista-Gomez, **Sheng Di**, Zhiling Lan, and Franck Cappello, “Exploring Partial Replication to Improve Lightweight Silent Data Corruption Detection for HPC Applications,” under review by LNCS 22nd International European Conference on Parallel and Distributed Computing (***LNCS Euro-par 2016***), 2016.
18. Omer Subasi, **Sheng Di**, Leonardo Bautista-Gomez, Prasanna Balaprakash, Osman Unsal, Jesus Labarta, Adrian Cristal, Franck Cappello, “Spatial Support Vector Regression to Mitigate Silent Errors in the Exascale Era,” to appear in 16th IEEE/ACM International Symposium of Cluster, Cloud and Grid Computing (***ACM CCGrid 2016***), 2016.
19. **Sheng Di**, Franck Cappello, “Fast Error-bounded Lossy HPC Data Compression with SZ,” to appear in International Parallel and Distributed Processing Symposium (***IEEE/ACM IPDPS 2016***), Chicago, 2016.
20. Song Wu, Zhenjiang Xie, Haibao Chen, **Sheng Di**, Xinyu Zhao, Hai Jin, “Dynamic Acceleration of Parallel Applications in Cloud Platforms by Adaptive Time-Slice Control,” to appear in International Parallel and Distributed Processing Symposium (***IEEE/ACM IPDPS 2016***), Chicago, 2016.
21. **Sheng Di**, Eduardo Berrocal, and Franck Cappello, “An Efficient Silent Data Corruption Detection Method with Error-feedback Control and Even Sampling for HPC Applications, ” to appear in IEEE/ACM 15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (***ACM CCGrid2015***), 2015.
22. Eduardo Berrocal, Leonardo Bautista-Gomez, **Sheng Di**, Zhiling Lan, and Franck Cappello, “Lightweight Silent Data Corruption Detection based on Runtime Data Analysis for HPC Applications,” in 24th ACM Symposium on High-Performance Parallel and Distributed Computing (***ACM HPDC2015***), short paper, 2015.
23. Xuanhua Shi, Junling Liang, **Sheng Di**, Bingsheng He, Hai Jin, Lu Lu, Zhixiang Wang, Xuan Luo, and Jianlong Zhong, ”Optimization of Asynchronous Graph Processing on GPU with Hybrid Coloring Model, ”, to appear in 20th ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (***PPoPP2015***), 2015, [poster].
24. **Sheng Di**, Eduardo Berrocal, Leonardo Bautista-Gomez1, Katherine Heisey, Rinku Gupta1, Franck Cappello, “Towards Effective Detection of Silent Data Corruptions for HPC Applications,” in IEEE/ACM 26th The International Conference for High Performance computing, Networking, Storage and Analysis (***IEEE/ACM SC2014***), 2014, [poster]

25. Xuanhua Shi, Haohong Lin, Hai Jin, Bingbing Zhou, Zuoning Yin, **Sheng Di** and Song Wu, "GIRAFFE: A Scalable Distributed Coordination Service for Large-scale Systems," in IEEE Proc. of 16th International Conference on Cluster Computing (***IEEE CLUSTER2014***), Madrid, Spain, 2014, ***best paper nominated***.
26. **Sheng Di**, Leonardo Bautista-gomez, Franck Cappello, "Optimization of Multi-level Checkpoint Model with Uncertain Execution Scales," in IEEE/ACM 26th The International Conference for High Performance computing, Networking, Storage and Analysis (***IEEE/ACM SC2014***), 2014.
27. Haibao Chen, Song Wu, **Sheng Di**, Bingbing Zhou, Zhenjiang Xie, Hai Jin, and Xuanhua Shi, "Communication-Driven Scheduling for Virtual Clusters in Cloud", in ACM Symposium on High-Performance Parallel and Distributed Computing (***ACM HPDC2014***), short paper, 2014.
28. **Sheng Di**, Mohamed Slim Bouguerra, Leonardo Bautista-gomez, Franck Cappello, "Optimization of Multi-level Checkpoint Model for Large-scale HPC Applications, " in International Parallel and Distributed Processing Symposium (***IEEE/ACM IPDPS 2014***), Phoenix, 2014.
29. **Sheng Di**, Cho-Li Wang, "Minimization of Cloud Task Execution Length with Workload Prediction Errors, " in International Conference on High Performance Computing (***IEEE/ACM HiPC 2013***), 2013.
30. **Sheng Di**, Yves Robert, Frédéric Vivien, Derrick Kondo, Cho-Li Wang, Franck Cappello, "Optimization of Cloud Service Processing with Checkpoint-Restart Mechanism," in IEEE/ACM 25th The International Conference for High Performance computing, Networking, Storage and Analysis (***IEEE/ACM SC2013***), pp. 64:1-64:12, 2013.
31. **Sheng Di**, Derrick Kondo, Cho-Li Wang, "Optimization and Stabilization of Composite Service Processing in a Cloud System," in The 21st International Symposium on Quality of Service (***IEEE/ACM IWQoS 2013***), pp. 41-50, 2013.
32. **Sheng Di**, Cho-Li Wang, Derrick Kondo, Guodong Han, "Towards Payment Bound Analysis for Cloud Systems with Workload Prediction Errors," in IEEE 6th International Conference on Cloud Computing (***IEEE CLOUD 13***), pp. 502-509, 2013.
33. **Sheng Di**, Derrick Kondo, Franck Cappello, "Characterizing Cloud Applications on a Google Data Center," in Proc. of 42th International Conference on Parallel Processing (***IEEE ICPP2013***), 2013.
34. **Sheng Di**, Derrick Kondo, Walfredo Cirne, "Host Load Prediction in a Google Compute Cloud with a Bayesian Model," in IEEE/ACM 24th The International Conference for High Performance computing, Networking, Storage and Analysis (***IEEE/ACM SC2012***), 2012.
35. **Sheng Di**, Derrick Kondo, Walfredo Cirne, "Characterization and Comparison of Cloud versus Grid Workloads," in IEEE Proc. of 14th International Conference on Cluster Computing (***IEEE CLUSTER2012***), 2012.
36. **Sheng Di**, Cho-Li Wang, Weida Zhang, Luwei Cheng, "Probabilistic Best-fit Multi-dimensional Range Query in Self-Organizing Cloud," in Proc. of 40th International Conference on Parallel Processing (***IEEE ICPP2011***), pp. 763-772, 2011.
37. **Sheng Di**, Cho-Li Wang, Luwei Cheng, Ling Chen, "Social-optimized Win-win Resource Allocation for Self-organizing Cloud," in IEEE International Conference on Cloud and Service Computing (***IEEE CSC2011***), 2011.
38. Zheming Xu, **Sheng Di**, Weida Zhang, Cho-Li Wang, and Luwei Cheng, "WAVNet: Wide-Area Network Virtualization for Elastic Cloud Computing," ***best paper nominated*** of Proc. of 40th International Conference on Parallel Processing (***IEEE ICPP2011***), pp. 285-294, 2011.

39. Luwei Cheng, Cho-Li Wang, **Sheng Di**, “Defeating Network Jitter for Virtual Machines,” ***best student paper*** in IEEE/ACM International Conference on Utility and Cloud Computing (***IEEE/ACM UCC2011***), 2011.

40. **Sheng Di** and Cho-Li Wang, “Dual-Phase Just-in-Time Workflow Scheduling in P2P Grid Systems", Proc. of IEEE 39th International Conference on Parallel Processing (***IEEE ICPP2010***), pp.238-247, 2010

41. **Sheng Di** and Cho-Li Wang, “Conflict-minimizing Dynamic Load Balancing for P2P Desktop Grid,” Proc. of IEEE/ACM 11th International Conference on Grid Computing (***IEEE/ACM Grid2010***), Brussels, Belgium, Oct 24-29, pp. 137-144, 2010.

42. **Sheng Di** and Cho-li Wang, Dexter H. Hu, "Gossip-based Dynamic Load Balancing in Self-organized Desktop Grid", in Proc of 10th High-Performance Computing in Asia-Pacific Region (***HPCAsia -27th APAN***), Taiwan, pp. 85-92, 2009.

43. **Sheng Di** and Cho-Li Wang, "Task Scheduling based on Dynamic Critical Task Estimation in P2P Grid Workflow" (in Chinese), ***CNGridAnnual2009***, pp. 1-8, 2009.

44. Ling Chen, **Sheng Di**, "RSR-CGSF: A Robust Cooperative Grid Service Framework based on Semantic Resource", Proc. of *IEEE ICIECS2009*, pp. 1-4, 2009.

45. Ling Chen, Hai Jin, **Sheng Di**, "A Semantic Double-Buffer Based Approach to Enhance Semantic Web Search", ***best paper award*** in 2nd International Conference on the Digital Society (***IEEE ICDS2008***), pp. 111-116, 2008.

46. **Sheng Di**, Hai Jin, Shengli Li, Ling Chen, Li Qi, Chengwei Wang, "Ontology Based Grid Information Interoperation," ainaw, 21st International Conf. on Advanced Information Networking and Applications Workshops (***IEEE AINAW2007***), pp. 91-96, 2007.

47. **Sheng Di**, Hai Jin, Shengli Li, Jing Tie, and Ling Chen, "Efficient Time Series Data Classification and Compression for Distributed Monitoring", Proc. Of the 2007 International Workshop on High Performance Data Mining and Applications (***HPDMA2007***, in conjunction with ***LNCS PAKDD2007***), pp. 389-400, 2007.

48. **Sheng Di**, Hai Jin, and Shengli Li, "A Flexible Two-Level Mechanism in Querying and Presenting Large-scale Historical Monitoring Data", in Proc. of the 13rd IEEE Asia-Pacific Conference on Communications (***IEEE APCC2007***), pp. 211-214, 2007.

49. Hai Jin, Chuanjiang Yi, **Sheng Di**, "A Composite-Service Authorization Prediction Platform for Grid Environment", in 4th International Conference on Cooperative Design, Visualization, and Engineering (***LNCS CDVE2007***), pp. 217-22, 2007.

50. **Sheng Di**, Hai Jin, Shengli Li, and Ling Chen, Chengwei Wang, "GlobalWatch: A Distributed Service Grid Monitoring Platform with High Flexibility and Usability", Asia-Pacific Service Computing Conference (***IEEE APSCC2006***), pp. 440-446, 2006.

Patents

- Hai Jin, Pingpeng Yuan, Li Huang, Feng Mao, **Sheng Di**, Sheng Sun, Shilun Yuan, Changqin Li, Yanxia Li, Qin Shi: "Grid Data Transmission Platform with High QoS and Multi-replica", NO. 200610125570.9, 2006, (in Chinese).

Awards and Honors

- National Second Prize, National High School Mathematics League, China, 1998
- National Third Prize, National High School Mathematics League, China, 1999
- Provincial First Prize, National High School Mathematics League, China, 1999
- First-class Scholarship, 2000-2001, South-Central University for Nationalities (top 1%)

- "Triple-A" Outstanding Student, 2000-2001, South-Central University for Nationalities
- First-class Scholarship, 2001-2002, South-Central University for Nationalities (top 1%)
- Second-class Scholarship, 2002-2003, South-Central University for Nationalities (top 2%)
- "Triple-A" Outstanding Student, 2002-2003, South-Central University for Nationalities
- Excellent Leadership Award, 2003-2004, South-Central University for Nationalities
- First-class Scholarship, 2004-2005, Huazhong university of Science and Technology
- Sum tuition Scholarship, 2004-2005, Huazhong university of Science and Technology
- First-class Scholarship, 2004-2005, Huazhong university of Science and Technology
- "Triple-A" Outstanding Student, 2005-2006, Huazhong univ. of Science and Technology
- Sum Tuition Scholarship, 2005-2006, Huazhong university of Science and Technology

Technical Background

- Programming Languages: Java, C, Fortran, Python, Bash, MPI, OpenMP, Prolog, JSP.
- High-Layer Technology: GIS (ArcGIS, OpenMap) / GUI
- Tools: LaTEX, Ant, XML, XSL, HTML, Doc book, etc.
- System and Database: Unix/Linux, MySQL, Oracle, etc.
- Network Communications: Socket, RMI, Web Service (Axis, Apache Muse, Globus, etc).
- Virtualization: XEN, VMWare, Virtual Box
- Other Technologies: Network Virtualization, OpenPBS/Torque, Design Pattern, UML, etc.

Selected Projects

- **Catalog Project**, **2015 – 2018**: In-depth characterization and analysis of the errors, failures and faults for large-scale (or exa-scale) supercomputing environment.
- **AMFT Project**, **2013 – 2016**: The AMFT prototype (GENCI/INRIA, BSC, and GENCI/CINES) will exploit new check-pointing technologies (Fault Tolerant Interface [FTI] and Multilevel Fault Tolerance [MFT]) in combination with different storage levels and technologies, in the context of resilience of HPC. It also aims to detect and correct silent data corruptions for HPC applications. *Please read my papers published in CCGrid15, SC13, SC14, ICPP13, HiPC13, IPDPS14 for details.*
- **Predicting Idleness of Data Centers**, **2012 - 2013**: This project, a Google Research Award, aims to model and predict workload/hostload for Google data centers, also aiming to improve system performance. *Please read my Cluster12, SC12, JPDC14 papers.*
- **Cloud@HOME, 2012 – 2013**: It is funded by the national French science foundation (called ANR) for running complex services over unreliable (Internet) resources, maximizing resource utilization and Quality of Service (QoS). My contribution is optimizing and stabilizing a best-suited queuing policy and a virtual resource allocation scheme. The prototype implemented is leveraging *ParallelColt* matrix-computation library and the resource isolation technology by XEN 4.0. *Please read my papers published in IEEE CLOUD2013 and IEEE/ACM IWQoS2013 for details.*
- **Desktop Cloud / Self-organizing Cloud**, **2010-2011**: This project is supported by Hong Kong RGC grant HKU 7179/09E and HKU Basic Research grant (Grant No. 10401460), and also in part by Hong Kong UGC Special Equipment Grant (SEG

HKU09). My contribution is developing a set of core optimization algorithms - optimal resource allocation with fully distributed resource discovery protocols. *Please read my TPDS2012, JPDC2012, ICPP2011, UCC2011 papers for details.*

- **CNGrid**, **2007-2011**: This project is a key national project under the High-Tech R&D Program (China-**863** program) in China. I am mainly in charge of the construction and development of HKU-Grid Point, one of the key Grid points along with other nine ones. The research contribution includes two papers, *which are published in ICPP2010 and the Journal of Huazhong University of Science and Technology 2011 respectively.*
- **SemREX**, **2006-2008**: This project is funded by China-**973** Project of National Basic Research and Development Plan. My major contribution is co-designing and co-developing the relationship-searching engine, *coauthoring a paper which was awarded as best-paper in IEEE ICDS2008.*
- **CGSV(ChinaGrid SuperVision)**, **2005-2006**: ChinaGrid SuperVison (CGSV) is sponsored by *HP* Inc. It is a key monitoring-software that provide real-time monitoring support for ChinaGrid. My major contribution is taking part in designing its whole architecture, developing Graphic User Interface and Archive module independently, and developing Registry and Windows Sensor cooperatively. *Please read my PAKDD2007 and APCC2007 papers for more information.*
- **GPE4CGSP(Sponsored by Intel)**, **2006**: The goal of this project is to integrate two well-known grid platforms: ChinaGrid/CGSP and UNICORE/GPE. My major contribution is analyzing the code of GPE and developing a middleware to integrate the Information Center of CGSP and that of GPE, supported by a GUI as well. *Please read my AINAW2007 paper for more information.*
- **CGSP(ChinaGrid Supported Platform)**, **2005-2006**: CGSP, the biggest grid project in China, is sponsored by Ministry of Education. It is designed and developed by about forty developers from twelve top-ranking universities in China. My major contribution is making a GUI to display its key information, such as jobs, applications, services and so on, and providing web service interfaces with Geo-Information System (GIS) support and security support. *More information could be found in my LNCS CDVE2007 paper.*
- **CoGIS**, **2004-2005**: My major contribution is integrating it with a distributed monitoring system (namely GlobalWatch system) and installing and administering Globus, GridFTP and debugging a Dynamic Replica Transmission platform. *Detailed information could be found in my patent NO. 200610125570.9.*
- **GlobalWatch (A distributed monitoring system)**, **2004-2005**: GlobalWatch is a distributed monitoring system used to monitor grid platforms. My contribution is developing the server and client software with another developer. We develop the server with Servlet technology and the sensor (Web Service) with WebService Application Server (WAS). *Please read my APSCC2007 paper for details.*

Softwares I developed (available to download for free)

- **GloudSim** (v 1.0): Google trace based cloud simulator with virtual machines
  https://code.google.com/p/gloudsim/
- **AID** (v 1.2): Adaptive Impact-driven Detector (for detecting SDC on HPC environment)
  https://collab.cels.anl.gov/display/ESR/AID
- **SZ** (v 0.5-0.6): Squeez (Error-bounded HPC in-situ Data Compressor).
  To be available for downloading https://collab.cels.anl.gov/display/ESR/SZ

Teaching Experience

- Teaching Assistant of Java-based object-oriented programming (c0396), 2007-2008
- Teaching Assistant of Principles of Operating Systems (c0230), 2008-2009
- Teaching Assistant of Principles of Operating Systems (c0230), 2010-2011

Activities (Invited Talks/Seminars)

- 2014, November 25th, **Invited Talk** at the 2nd Joint Lab of Extreme-Scale Computing (JLESC) Workshop, **Chicago, USA.**.
- 2014, May 8th, **Invited Talk** at Argonne National Laboratory, **Lemont, USA**.
- 2014, April 2nd, **Invited Talk** at University of California – Merced, **Merced, USA**.
- 2014, Feb. 11th, **Invited Talk** at Huazhong University of Science and Technology, **Wuhan, China**.
- 2014, Jan. 24th, **Invited Talk** at Shenzhen Institutes of Advanced Technology, **Shenzhen, China**.
- 2014， Jan. 23rd, **Invited Talk** at The University of Hong Kong, **Hong Kong, China.**
- 2013, Nov. 25-27th, **Invited Talk** at the 10th Workshop of the INRIA-Illinois Joint Laboratory on Petascale Computing, **UIUC, USA**.
- 2013, June 12-14th, **Invited Talk** at the 9th Workshop of the INRIA-Illinois Joint Laboratory on Petascale Computing, **Lyon, France**.
- 2012, Nov. 19-22nd, **Invited Talk,** at **Google (Mountain View, California), USA.**
- 2011, Aug. 22-23rd, **Final-check Report** for HKU-Grid project, on behalf of System Research Group of The University of Hong Kong, **Beijng (Peking), China.**
- 2011, Jan. 12-13rd, **Stage Report** of the development progress for HKU-Grid project, on behalf of System Research Group of The University of Hong Kong, Beiijng (Peking), China.
- 2010, July. 29-Aug. 1st, **Stage Report** of the development progress for HKU-Grid, on behalf of System Research Group of The University of Hong Kong, at Xilinhot, Inter Mongolia, China.
- 2008, Dec.18-20th, **Stage Report** of development progress for HKU-Grid project, on behalf of System Research Group of The University of Hong Kong, at Shenghai, China.
- 2008, July. 24-25, **Stage Report** of the development progress for HKU-Grid project, on behalf of System Research Group of The University of Hong Kong, at Wuxi, Jiangsu, China.
- 2008, Jun. 22-25th, **Stage Report** of the development progress for HKU-Grid project, on behalf of System Research Group of The University of Hong Kong, at Beijing (Peking), China.
- 2007, July 24-25th, **Stage Report** of the development progress for HKU-Grid project, on behalf of System Research Group of The University of Hong Kong, at Beijing (Peking), China.

Program/Organizing Committee Member

- **Program Chair**: IEEE Workshop on Fault Tolerant Systems (FTS 2016), in conjunction with IEEE CLUSTER 2016..

- **Program Committee Member:** IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing (CCGrid16), 2016.
- **Program Committee Member**: IEEE fourth International Workshop on Cloud Computing Interclouds, Multiclouds, Federations, and Interoperability (IEEE Intercloud'15)
- **Organizing Chair**: Postdoc-Ph.D-Student Session at JLESC Workshop, Chicago, November 24-26th, 2014.
- **Program Committee Member**: 5th International Conference on Scalable Information Systems (Infoscale2014), Seoul, South Korea, 2014.
- **Program Committee Member**: Asia-Pacific Services Computing Conference (APSCC-2014), 2014.
- **Program Committee Member**: 6th IEEE International Conference on Cloud Computing Technology and Science (CloudCom-2014), 2014.
- **Program Committee Member**: International Workshop on Mobile Internet Big Data, Wuhan, 2014.
- **Program Committee Member**: IEEE International Workshop on Advanced Technologies of Cloud Computing, IWATCC14, 2014.
- **Program Committe Member**: IEEE International Conference on Services Computing (SCC-2014), 2014.
- **Program Committee Member**: IEEE Third International Workshop on Cloud Computing Interclouds, Multiclouds, Federations, and Interoperability (IEEE Intercloud'14)
- **Program Committee Member**: The 8th International Conference on Complex, Intelligent, and Software Intensive Systems (CISIS 2014), Birmingham, UK.
- **Program Committee Member**: The 5th IEEE International Conference on Cloud Computing Technology and Science (CloudCom-2013)
- **Program Committee Member**: The 27th IEEE International Conference on Advanced Information Networking and Applications (AINA-2013)
- **Program Committee Member**: The 4th IEEE International Conference on Cloud Computing Technology and Science (CloudCom-2012)
- **Program Committee Member**: IEEE Asia Pacific Cloud Computing Conference, 2012 (APCloud-2012)
- **Local Organizing Committee member**: PRAGRMA Confeference 2011
- **Local Organizing Committee member**: The 6th OMII-CNGrid Training 2008

Invited External Reviewer

- IEEE Transaction on Computers (TC), 2008
- Journal of Parallel Distributed and Computing (JPDC 2008), 2008
- IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing (CCGrid09)
- High Performance Computing Asia (HPCAsia09), 2009
- IEEE International Conference on Cluster Computing (IEEE Cluster09), 2009
- International Conference on Parallel and Distributed Computing (ICPADS09), 2009

- IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing (CCGrid10)
- IEEE 4th International Conference on Cloud Computing (Cloud10), 2010
- Journal of Computer Science and Technology (JCST), 2010
- Heterogeneity in Computing Workshop (HCW10) in conjunction with IEEE/ACM IPDPS10
- CNGrid Annual Conference 2009/2010/2011
- IEEE/ACM International Parallel & Distributed Processing Symposium (IPDPS11), 2011
- IEEE International Conference on Parallel Processing (ICPP11), 2011
- Heterogeneity in Computing Workshop (HCW11) in conjunction with IPDPS11
- International Conference on Services Computing (SCC11), 2011
- Cloud Computing (CloudCom11), 2011
- International Journal of Computational Science and Engineering, 2012
- International Journal of Scientific Research and Essays, 2012
- IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing (CCGrid13)
- International Journal of Automated Software Engineering (ASE), 2013
- International Journal of Peer-to-Peer Networking and Applications (PPNA), 2013
- International Conference on Networking and Grid Cloud Computing (ICNGCC-2013)
- International Journal of Future Generation Computer Systems (FGCS), 2013
- KSII Transactions on Internet and Information Systems (TIIS), 2013
- Journal of Zhejiang University, 2013.
- IEEE Transactions on Parallel and Distributed Systems (TPDS), 2013.
- IEEE/ACM International Parallel & Distributed Processing Symposium (IPDPS13), 2013.
- IEEE Transactions on Cloud Computing (TCC), 2013.
- IEEE/ACM International Parallel & Distributed Processing Symposium (IPDPS14), 2014.
- KSII Transactions on Internet and Information Systems (TIIS), 2014.
- IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing (CCGrid14)
- Journal of Computer Science and Technology (JCST), 2014.
- IEEE Transactions on Cloud Computing (TCC), 2014.
- IEEE/ACM The International Conference for High Performance computing, Networking, Storage and Analysis (SC2014), 2014.
- IEEE Transactions on Parallel and Distributed Systems (TPDS), 2014.
- International Journal of Future Generation Computer Systems (FGCS), 2014
- IEEE/ACM International Parallel & Distributed Processing Symposium (IPDPS15), 2015.
- IEEE Transactions on Cloud Computing (TCC2015), 2015.
- Journal of Mathematical Problems in Engineering (MPE), 2015.
- IEEE International Workshop on Cloud Computing Interclouds, Multiclouds, Federations, and Interoperability (Intercloud 2015), 2015.
- elsevier Journal of Systems and Software (JSS), 2015.

- International ACM Symposium on High Performance Parallel and Distributed Computing (HPDC15), 2015.
- International Journal of Future Generation Computer Systems (FGCS), 2015.
- International Conference on Cluster Computing (IEEE CLUSTER-2015), 2015.
- IEEE Systems Journal (SJ), 2015.
- Journal of Software: Practice and Experience (SPE), 2015.
- Journal of Parallel Distributed and Computing (JPDC), 2015.
- The Computer Journal, 2015.
- The 12th Annual IFIP International Conference on Network and Parallel Computing (NPC15), 2015.
- IEEE Transactions on Parallel and Distributed Systems (TPDS), 2015.
- International Conference on Cloud Computing and Big Data (CCBD), 2015.
- IEEE Transactions on Services Computing (TSC), 2015.
- Journal of Knowledge based Systems (KBS), 2015.
- IEEE International Parallel and Distributed Processing Symposium (IPDPS'16), 2016.
- IEEE/ACM International Symposium of Cluster, Cloud and Grid Computing (CCGrid'16), 2016.
- IEEE International Symposium on ACM High Performance Parallel and Distributed Computing (HPDC'16), 2016.
- IEEE Transactions on Parallel and Distributed Systems (TPDS), 2016.
- ACM International Conference on Supercomputing (ICS'16), 2016.

Reference List

- Prof. Franck Cappello (my current postdoc adviser), Senior Scientist, Argonne National Laboratory, cappello@mcs.anl.gov.
- Prof. Yves Robert (**Fellow of IEEE**, coauthors), http://graal.ens-lyon.fr/~yrobert/, Yves.Robert@ens-lyon.fr , (+33) 4 37 28 74 72
- Dr. Derrick Kondo (my previous postdoc adviser), Research Scientist, INRIA, dkondo@gmail.com .
- Prof. Cho-Li Wang (my Ph.D supervisor), Professor, University of Hong Kong, clwang@cs.hku.hk, http://www.cs.hku.hk/~clwang , (852) 28578458
- Prof. Francis C.M. Lau, Professor, University of Hong Kong, http://www.cs.hku.hk/~fcmlau