Jianwu Wang

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Information Systems Department
University of Maryland, Baltimore County (UMBC)

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Short Biography

Dr. Jianwu Wang is an Assistant Professor at the Department of Information Systems, the University of Maryland, Baltimore County (UMBC). He is also an Adjunct Professor at North China University of Technology. After doing research for several years at the University of California, San Diego (UCSD), he joined UMBC fall 2015. He got his Ph.D. degree in Computer Science from Institute of Computing Technology, Chinese Academy of Sciences in 2007. His research interests include Big Data, Scientific Workflow, Distributed Computing, Service-Oriented Computing, End-User Programming. He has published over 60 papers with more than 600 citations. He is associate editor or editorial board member of three international journals, co-chair of four related workshops. He is also program committee member for over 30 conferences/workshops, and reviewer of over 10 journals or books.

Research Interests

Big Data/Data Science, Scientific Workflow, Business Process Management, Distributed Computing (Cluster, Grid, Cloud), Service-Oriented Computing, End-User Programming

Education

2008.3 - 2010.3 **Post-Doctor** at Scientific Workflow Automation Technologies (SWAT) Laboratory, San Diego Supercomputer Center, University of California, San Diego, San Diego, U.S.A.

2007.7 - 2008.3 **Post-Doctor** at Software Engineering Research Group, Department of Control and Computer Engineering, Politecnico di Torino, Turin, Italy.

2001.9 - 2007.7 **Ph.D.** in Computer Software and Theory, Institute of Computing Technology, University of Chinese Academy of Sciences, Beijing, China.

1997.9 - 2001.7 **B.S.** in Computer Science and Technology, Tianjin University, Tianjin, China.

Employment

2015.8 - Present **Assistant Professor**, Information Systems Department, University of Maryland, Baltimore County (UMBC).

2015.8 - Present **Affiliated Faculty** at the NSF Center for Multicore Productivity Research (CHMPR),

	University of Maryland, Baltimore County (UMBC).
2012.5 - Present	**Adjunct Professor** at Research Center for Cloud Computing, North China University of Technology, Beijing, China.
2014.3 - 2015.8	the **Assistant Director for Research** of Workflows for Data Science (WorDS) Center of Excellence, San Diego Supercomputer Center, University of California, San Diego, San Diego, U.S.A.
2015.7 - 2015.8	**Assistant Project Scientist** at San Diego Supercomputer Center, University of California, San Diego, San Diego, U.S.A.
2014.8 - 2015.7	**Visiting Assistant Research Scientist** at Computer Science Department, University of Maryland, College Park, MD, U.S.A.
2010.3 - 2015.6	**Assistant Project Scientist** at San Diego Supercomputer Center, University of California, San Diego, San Diego, U.S.A.
2013.4 - 2013.9	**Summer Session Lecturer** at Department of Computer Science and Engineering (CSE), University of California, San Diego, San Diego, U.S.A.
2008.3 - 2010.3	**Postdoctoral Researcher** at Scientific Workflow Automation Technologies (SWAT) Laboratory, San Diego Supercomputer Center, University of California, San Diego, San Diego, U.S.A.
2007.7 - 2008.3	**Postdoctoral Researcher** at Software Engineering Research Group, Department of Control and Computer Engineering, Politecnico di Torino, Turin, Italy.
2001.9 - 2007.7	**Research Assistant** at Research Center for Grid and Service Computing, Institute of Computing Technology, Chinese Academy of Sciences, Beijing, China.

Teaching Experiences/Preparations

Fall, 2015	Teach course IS 651 - Distributed Systems, Information Systems Department, University of Maryland, Baltimore County (UMBC)
Fall, 2014	Teach course CMSC106-Introduction to C Programming, Computer Science Department, University of Maryland
Summer, 2013	Teach course CSE21-Mathematics for Algorithms and Systems Analysis, Department of Computer Science and Engineering (CSE), UCSD, Summer Session II
2013.1 - 2013.3	Take the College Classroom Course for Teaching, Center for Teaching Development, UCSD
2010.11	Guest Lecture on Scientific Workflow Scheduling at Graduate Students Seminar on Scheduling Algorithms (CSE 290, Section ID: 692291, Instructor: Dr. Oliver Braun), Department of Computer Science and Engineering, UCSD

Research Interests

Big Data, Scientific Workflow, Business Process Management, Distributed Computing (Cluster, Grid, Cloud), Service-Oriented Computing, End-User Programming

Grant Awards/Experiences

- Co-PI for Addressing Fundamental Sensing and Data Processing Problems in Sustainable Farms,

UMBC COEIT Strategic Plan Implementation Grant, 2015.1-2015.12. $35,626.

- PI for Amazon Web Services in Education Research Grants (2010.3-2011.2, 2011.3-2013.2): Scientific workflow scheduling in Cloud computing. $11,000.
- Co-PI in NFSC Proposal: Optimizing the Execution of Scientific Workflows with Mixed Parallelization Patterns in Cloud Environments.
- Sub-contract Co-PI in collaboration with UCLA and UT Austin for The Smart Manufacturing Leadership Coalition (SMLC), DOE program, 2013/08 - 2015/07, $137,328.
- Co-PI in Rejected NFS Proposal: SI2-SSE: Dynamic Circuit Enabled Data Transfer and Co-Scheduling of Network and Computational Resources for Large-Scale Scientific Applications. Review results: two excellent, one very good, two good.
- Help write NSF grant proposal: bioKepler: A Comprehensive Bioinformatics Scientific Workflow Module for Distributed Analysis of Large-Scale Biological Data. Funded with number DBI-1062565, $1,409,153.
- Help write NSF grant proposal: WIFIRE: A Scalable Data-Driven Monitoring, Dynamic Prediction and Resilience Cyberinfrastructure for Wildfires. Funded with number ACI-1331615, $2,651,758.
- Help write NIH grant proposal: An Open Resource for Collaborative Biomedical Big Data Training. Funded with number 1R25GM114821-01, $215,836.

Publications (with 600+ citations)

2016:

[1]. **Jianwu Wang**, Zhichuan Huang, Wenbin Zhang, Ankita Patil, Ketan Patil, Ting Zhu, Eric J Shiroma, Mitchell A Schepps, and Tamara B Harris. Wearable Sensor based Human Posture Recognition, Accepted by the *3rd Annual Workshop on Big Data Analytic Technology for Bioinformatics and Health Informatics* (KDDBHI 2016) at 2016 IEEE International Conference on Big Data (Big Data 2016).

[2]. **Jianwu Wang**, Moustafa AbdelBaky, Javier Diaz-Montes, Shweta Purawat, Manish Parashar, and Ilkay Altintas. Kepler + CometCloud: Dynamic Scientific Workflow Execution on Federated Cloud Resources, In Proceedings of the *International Conference on Computational Science 2016* (ICCS 2016), pages 700-711, 2016.

[3]. George Karabatis, **Jianwu Wang**, Ahmed AlEroud. Towards Adaptive Big Data Cyber-attack Detection via Semantic Link Networks. Accepted by the *first Workshop of Mission-Critical Big Data Analytics Workshop* (MCBDA 2016).

[4]. Prakashan Korambath, **Jianwu Wang**, Ankur Kumar, Jim Davis, Robert Graybill, Brian Schott, and Michael Baldea. A Smart Manufacturing Use Case: Furnace Temperature Balancing in Steam Methane Reforming Process via Kepler Workflows. In Proceedings of the *International Conference on Computational Science 2016* (ICCS 2016), pages 680-689, 2016.

[5]. Meiling Zhu, Chen Liu, **Jianwu Wang**, Xiongbin Wang, Yanbo Han. A Service-Friendly Approach to Discover Traveling Companions based on ANPR Data Stream, In Proceedings of the *13th IEEE International Conference on Services Computing* (SCC 2016), pages 171-178, 2016.

[6]. Zhongmei Zhang, Xiaohong Li, Chen Liu, **Jianwu Wang**, Yanbo Han. A Service-based Method for Carpooling in Community Based on Traffic Data. Accepted by the *International Journal of*

Services Computing (IJSC).

[7]. Zhichuan Huang, Tiantian Xie, Ting Zhu, **Jianwu Wang**, and Qingquan Zhang. Application-Driven Sensing Data Reconstruction and Selection Based on Correlation Mining and Dynamic Feedback, Accepted by the 2016 IEEE International Conference on Big Data (Big Data 2016).

2015:

[8]. **Jianwu Wang**, Daniel Crawl, Shweta Purawat, Mai Nguyen, Ilkay Altintas. Big Data Provenance: Challenges, State of the Art and Opportunities, In Proceedings of the *2015 IEEE Conference on Big Data Conference* (BigData 2015), pages 2323-2330, 2015.

[9]. Chen Liu, **Jianwu Wang**, Yanbo Han. Discovery of Service HyperLinks with User Feedbacks for Situational Data Mashup. *International Journal of Database Theory and Application*. 8(4), pages 71-80, 2015. http://dx.doi.org/10.14257/ijdta.2015.8.4.08

[10]. Zhuofeng Zhao, Weilong Ding, **Jianwu Wang**, Yanbo Han. A Hybrid Processing System for Large-Scale Traffic Sensor Data, in *IEEE Access*, Vol. 3, pages 2341-2351, 2015.

[11]. Meiling Zhu, Chen Liu, **Jianwu Wang**, Xiongbin Wang, Yanbo Han. Instant Discovery of Moment Companion Vehicles from Big Streaming Traffic Data, In Proceedings of the *2015 International Conference on Cloud Computing and Big Data* (CCBD 2015), pages 73-80, 2015.

[12]. Yu Qian, Hyunsoo Kim, Shweta Purawat, **Jianwu Wang**, Rick Stanton, Alexandra Lee, Weijia Xu, Ilkay Altintas, Robert Sinkovits, and Richard H. Scheuermann. FlowGate: towards extensible and scalable web-based flow cytometry data analysis. In Proceedings of the *2015 XSEDE Conference: Scientific Advancements Enabled by Enhanced Cyberinfrastructure* (XSEDE 2015). ACM, New York, NY, USA, Article No. 5, 2015.

[13]. Jim Davis, Thomas Edgar, Robert Graybill, Prakashan Korambath, Brian Schott, Denise Swink, **Jianwu Wang**, Jim Wetzel. Smart Manufacturing Technology. *Annual Review of Chemical and Biomolecular Engineering*. Vol. 6, pages 141-160, 2015.

2014:

[14]. **Jianwu Wang**, Yan Tang, Mai Nguyen, Ilkay Altintas. A Scalable Data Science Workflow Approach for Big Data Bayesian Network Learning. In Proceedings of the *2014 IEEE/ACM International Symposium on Big Data Computing* (BDC 2014), pages 16-25, Acceptance rate: 22%.

[15]. **Jianwu Wang**, Daniel Crawl, Ilkay Altintas, Weizhong Li. Big Data Applications using Workflows for Data Parallel Computing. *Computing in Science & Engineering*, 16(4), pages 11-22, July-Aug. 2014, IEEE.

[16]. **Jianwu Wang**, Prakashan Korambath, Ilkay Altintas, Jim Davis, Daniel Crawl. Workflow as a Service in the Cloud: Architecture and Scheduling Algorithms. In Proceedings of the *14th International Conference on Computational Science* (ICCS 2014), pages 546-556, Elsevier.

[17]. Zhuohui Gan, **Jianwu Wang**, Nathan Salomonis, Jennifer C. Stowe, Gabriel G. Haddad, Andrew D. McCulloch, Ilkay Altintas and Alexander C. Zambon. MAAMD: A Workflow to Standardize Meta-Analyses and Comparison of Affymetrix Microarray Data, *BMC Bioinformatics Journal*. 15(1), 69, 2014.

[18]. Chen Liu, **Jianwu Wang**, Yanbo Han. Mashroom+: An Interactive Data Mashup Approach with

Uncertainty Handling. *Journal of Grid Computing*, 12(2), June 2014, pages 221-244, Springer. DOI: 10.1007/s10723-013-9280-5.

[19]. Prakashan Korambath, **Jianwu Wang**, Ankur Kumar, Lorin Hochstein, Brian Schott, Robert Graybill, Michael Baldea, and Jim Davis. Deploying Kepler Workflows as Services on a Cloud Infrastructure for Smart Manufacturing. In Proceedings of *the Second International Workshop on Advances in the Kepler Scientific Workflow System and Its Applications* at the 14th International Conference on Computational Science (ICCS 2014), pages 2254-2259, Elsevier.

[20]. Wanghu Chen, Ilkay Altintas, **Jianwu Wang** and Jing Li. Enhancing Smart Re-run of Kepler Scientific Workflows based on Near Optimum Provenance Caching in Cloud, In Proceedings of by *IEEE 2014 Eighth International Symposium on Scientific Workflows and Big Data Science (SWF 2014)*, at the 2014 Congress on Services (SERVICES 2014), pages 378-384.

[21]. Zhuofeng Zhao, Weilong Ding, **Jianwu Wang**. A Spatio-temporal Parallel Processing System for Traffic Sensory Data. In Proceedings of the *2014 Asia-Pacific Services Computing Conference* (APSCC 2014), pages 48-54, doi: 10.1109/APSCC.2014.16

[22]. Xiaoyu Yang, David Wallom, Simon Waddington, **Jianwu Wang**, Arif Shaon, Brian Matthews, Michael Wilson, Yike Guo, Li Guo, Jon Blower, Athanasios V. Vasilakos, Philip Kershaw. Cloud Computing in e-Science: Research Challenges and Opportunities. *Journal of Supercomputing*, August 2014, DOI: 10.1007/s11227-014-1251-5.

[23]. Zhuofeng Zhao, Jun Fang, Weilong Ding, **Jianwu Wang**. An Integrated Processing Platform for Traffic Sensor Data and Its Applications in Intelligent Transportation Systems, In Proceedings of *IEEE 2014 Second International Workshop on Service and Cloud Based Data Integration (SCDI 2014)*, at the 2014 Congress on Services (SERVICES 2014), pages 161-168.

[24]. Ruijuan Chen, Xiaohua Wan, Albert Lawrence, **Jianwu Wang**, Daniel Crawl, Sébastien Phan, Ilkay Altintas, Mark Ellisman. EPiK - a Workflow for Electron Tomography in Kepler. In Proceedings of *the Second International Workshop on Advances in the Kepler Scientific Workflow System and Its Applications* at the 14th International Conference on Computational Science (ICCS 2014), pages 2295-2305, Elsevier.

[25]. Pek U. Ieong, Jesper Sorensen, Prasantha L. Vemu, Celia W. Wong, Ozlem Demir, Nadya P. Williams, **Jianwu Wang**, Daniel Crawl, Robert V. Swift, Robert D. Malmstrom, Ilkay Altintas, Rommie E. Amaro. Progress towards automated Kepler scientific workflows for computer-aided drug discovery and molecular simulations. In Proceedings of *the Second International Workshop on Advances in the Kepler Scientific Workflow System and Its Applications* at the 14th International Conference on Computational Science (ICCS 2014), pages 1745-1755, Elsevier.

2013:

[26]. **Jianwu Wang**, Daniel Crawl, Ilkay Altintas, Kostas Tzoumas, Volker Markl. Comparison of Distributed Data-Parallelization Patterns for Big Data Analysis: A Bioinformatics Case Study. In Proceedings of *the Fourth International Workshop on Data Intensive Computing in the Clouds (DataCloud 2013)* at International Conference for High Performance Computing, Networking, Storage and Analysis (SC'13).

[27]. Marcin Plociennik, Tomasz Zok, Ilkay Altintas, **Jianwu Wang**, Daniel Crawl, David Abramson, Frederic Imbeaux, Bernard Guillerminet, Marcos Lopez-Caniego, Isabel Campos Plasencia,

Wojciech Pych, Pawel Ciecielag, Bartek Palak, Michal Owsiak, Yann Frauel and ITM-TF contributors. Approaches to Distributed Execution of Scientific Workflows in Kepler. In *Fundamenta Informaticae*, 128 (3), 2013.

[28]. Chen Liu, **Jianwu Wang**, Yanbo Han. Situation-Aware Data Service Composition Based on Service Hyperlinks. In Proceedings of *the Sixth International Workshop on Personalization in Cloud and Service Computing (PCS 2013)* at the 14th International Conference on Web Information System Engineering (WISE 2013), pages 153-167.

2012:

[29]. Cheng Zhang, **Jianwu Wang**, Xiaofang Zhao and Yanbo Han. An Item-Targeted User Similarity Method for Data Service Recommendation. In Proceedings of *the First International Workshop on Service and Cloud Based Data Integration (SCDI 2012)*, at the 2012 IEEE 16th International Enterprise Distributed Object Computing Conference (EDOC 2012), pages 172-178.

[30]. Chen Liu, **Jianwu Wang**, Yan Wen, and Yanbo Han. A Unified Data and Service Integration Approach for Dynamic Business Collaboration. In Proceedings of *the IEEE First International Conference on Services Economics (SE 2012)*, pages 54-61.

[31]. **Jianwu Wang**, Ilkay Altintas. Early Cloud Experiences with the Kepler Scientific Workflow System. In Proceedings of *the First International Workshop on Advances in the Kepler Scientific Workflow System and Its Applications* at the 12th International Conference on Computational Science (ICCS 2012), pages 1630-1634.

[32]. **Jianwu Wang**, Daniel Crawl, Ilkay Altintas. A Framework for Distributed Data-Parallel Execution in the Kepler Scientific Workflow System. In Proceedings of *the First International Workshop on Advances in the Kepler Scientific Workflow System and Its Applications* at the 12th International Conference on Computational Science (ICCS 2012), pages 1620-1629.

[33]. Ilkay Altintas, **Jianwu Wang**, Daniel Crawl, Weizhong Li. Challenges and Approaches for Distributed Workflow-Driven Analysis of Large-Scale Biological Data. In Proceedings of *the Workshop on Data analytics in the Cloud (DanaC2012)* at EDBT/ICDT 2012 Conference, pages 73-78.

2011:

[34]. Daniel Crawl, **Jianwu Wang**, Ilkay Altintas. Provenance for MapReduce-based Data-Intensive Workflows. In Proceedings of *the Sixth Workshop on Workflows in Support of Large-Scale Science (WORKS11)* at Supercomputing 2011 (SC2011) Conference. ACM 2011, pages 21-30.

[35]. **Jianwu Wang**, Prakashan Korambath, Ilkay Altintas. A Physical and Virtual Compute Cluster Resource Load Balancing Approach to Data-Parallel Scientific Workflow Scheduling. In Proceedings of *IEEE 2011 Fifth International Workshop on Scientific Workflows (SWF 2011)* at 2011 Congress on Services (Services 2011), pages 212-215.

[36]. **Jianwu Wang**, Prakashan Korambath, Seonah Kim, Scott Johnson, Kejian Jin, Daniel Crawl, Ilkay Altintas, Shava Smallen, Bill Labate, Kendall N. Houk. Facilitating E-Science Discovery Using Scientific Workflows on the Grid. In X. Yang, L.Wang, W. Jie (eds), *Guide to e-Science: Next Generation Scientific Research and Discovery*. ISBN: 978-0-85729-438-8, pages 353-382. Springer, 2011.

2010:

[37]. **Jianwu Wang**, Prakashan Korambath, Seonah Kim, Scott Johnson, Kejian Jin, Daniel Crawl, Ilkay Altintas, Shava Smallen, Bill Labate, Kendall N. Houk. Theoretical Enzyme Design Using the Kepler Scientific Workflows on the Grid. In Proceedings of *the Fifth Workshop on Computational Chemistry and Its Applications (5th CCA)* at International Conference on Computational Science (ICCS 2010).

2009:

[38]. **Jianwu Wang**, Daniel Crawl, Ilkay Altintas. Kepler + Hadoop : A General Architecture Facilitating Data-Intensive Applications in Scientific Workflow Systems. In Proceedings of *the Fourth Workshop on Workflows in Support of Large-Scale Science (WORKS09)* at Supercomputing 2009 (SC2009) Conference.

[39]. **Jianwu Wang**, Ilkay Altintas, Parviez R. Hosseini, Derik Barseghian, Daniel Crawl, Chad Berkley, Matthew B. Jones. Accelerating Parameter Sweep Workflows by Utilizing Ad-hoc Network Computing Resources: an Ecological Example. In Proceedings of *IEEE 2009 Third International Workshop on Scientific Workflows (SWF 2009)* at 2009 Congress on Services (Services 2009), pages 267-274.

2008:

[40]. **Jianwu Wang**, Ilkay Altintas, Chad Berkley, Lucas Gilbert, Matt B. Jones. A High-Level Distributed Execution Framework for Scientific Workflows. In Proceedings of *workshop SWBES08: Challenging Issues in Workflow Applications* at the Fourth IEEE International Conference on e-Science (e-Science 2008), pages 634-639.

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[42]. **Jianwu Wang**, Wanghu Chen, Yanbo Han. Domain-oriented and Customizable Service Model. *Journal of Computer Engineering*, 34(4), 2008.

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2007:

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2006:

[47]. Jun Han, Yanbo Han, Yan Jin, **Jianwu Wang**, Jian Yu (alphabetical order). Personalized Active Service Spaces for End-User Service Composition. In Proceedings of *the 2006 IEEE International Conference on Services Computing (SCC 2006)*, 2006.

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2006, 43(11).

[49]. He Huang, Zhongzhi Shi, **Jianwu Wang** and Rui Huang. DDL: Embracing Actions into Semantic Web. In Proceedings of *2006 IFIP International Conference on Intelligent Information Processing (IIP2006)*, 2006.

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[51]. Jian Yu, Tan Phan Manh, Jun Han, Yan Jin, Yanbo Han, **Jianwu Wang**. Pattern Based Property Specification and Verification for Service Composition. In Proceedings of *the Seventh International Conference on Web Information Systems Engineering (WISE 2006)*.

[52]. Hailue Lin, Chen Liu, **Jianwu Wang**, Jun Fang, Houfu Li. A Business Domain Oriented Service Modeling Approach and its Supporting Framework, *Information Technology Letter*. 4(3), 2006, pages:10-17.

2005:

[53]. **Jianwu Wang**, Jian Yu, Yanbo Han. A Service Modeling Approach with Business-Level Reusability and Extensibility. In Proceedings of *IEEE International Workshop on Service-Oriented System Engineering (SOSE 2005)*, October 20-21, 2005. Beijing.

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[55]. Jian Yu, Jun Fang, Yanbo Han, **Jianwu Wang**, Cheng Zhang. An Approach to Abstracting and Transforming Web Services for End-user-doable Construction of Service-Oriented Applications. In Proceedings of *the Second International Conference on Grid Services Engineering and Management (GSEM'05)*. Lecture Notes in Informatics.

2004:

[56]. **Jianwu Wang,** Yanbo Han, Jing Wang and Gang Li. An Approach to Dynamically Reconfiguring Service-Oriented Applications from a Business Perspective, In Proceedings of *Advanced Workshop on Content Computing (AWCC 2004)*, LNCS 3309, pages 357-368, 2004.

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[58]. Donglai Li, Yanbo Han, **Jianwu Wang**, Jian Yu. Research on Service Availability and Its Related Exceptions within Service-Oriented Applications. *Journal of Computer Research and Development*, 41(12), 2004.

[59]. Zhuofeng Zhao, Yanbo Han, Jian Yu, **Jianwu Wang**. A Service Virtualization Mechanism for Business User Programming. *Journal of Computer Research and Development*, 41(12), 2004.

2003:

[60]. Gang Li, **Jianwu Wang**, Jing Wang, Yanbo Han, Zhuofeng Zhao, Roland M. Wagner, Haitao Hu. MASON: A Model for Adapting Service-Oriented Grid Applications. In Proceedings of *2003 Grid and Cooperative Computing Conference (GCC 2003)*, LNCS 3032, pages 99-107.

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Professional Services

- Journal Editor
  1) Associate Editor, International Journal of Computers and Their Applications (IJCA)
  2) Editorial Board Member, Future Generation Computer Systems, Elsevier Press
  3) Editorial Board Member, Services Transactions on Internet of Things (STIOT)
  4) Editorial Board Member, Cluster Computing, Springer Press (2012-2015)
  5) Guest Editor for special issue on Service and Cloud Based Data Integration, the Journal of Grid Computing, Springer Press, Published June 2014
- Journal Special Issue Chair
  1) The 14th IEEE International Conference on Ubiquitous Intelligence and Computing (IEEE UIC 2017)
- Program Area/Track Chair
  1) Scientific Workflows, The 13th International Conference on Service Computing (SCC 2016)
  2) Internet of Things (IoT) and Collaboration, The 13th EAI International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom 2017)
- Poster Chair
  1) 2016 IEEE International Conference on Big Data (IEEE BigData 2016)
- Session Chair
  1) The International Conference on Computational Science (ICCS 2016)
  2) The 13th International Conference on Service Computing (SCC 2016)
  3) IEEE Ninth International Conference on Web Services (ICWS 2011)
- Workshop Co-Chair
  1) The Third Workshop on Advances in the Kepler Scientific Workflow System and Its Applications (Kepler 2016)
  2) The Second International Workshop on Service and Cloud Based Data Integration (SCDI 2014)
  3) The First International Workshop on Service and Cloud Based Data Integration (SCDI 2012)
  4) The Second International Workshop on Advances in Data and Information Management: Recent Advances of Cloud Computing in Data and Information Management (ADIM 2011)
- Conference Program Committee Member
  1) IEEE International Conference on Data Engineering, Applications Track (ICDE 2017)
  2) The Third IEEE International Conference on Big Data Computing Service and Applications (IEEE BigDataService 2017)
  3) 2016 IEEE International Conference on Big Data (IEEE BigData 2016)

4) IEEE Fifth International Congress on Big Data (IEEE BigDataCongress 2016)
5) The 12th International Conference on Service Oriented Computing (ICSOC 2016)
6) The 12th IEEE International Conference on eScience (eScience 2016)
7) The Second IEEE International Conference on Big Data Computing Service and Applications (IEEE BigDataService 2016)
8) The First International Conference on Internet of Things Services (S2 IOTS 2016)
9) The 18th International Conference on Information Integration and Web-based Applications & Services (iiWAS 2016)
10) The International Conference on Computational Science (ICCS 2016)
11) The 10th International Conference on Asia-Pacific Services Computing (APSCC 2016)
12) The Third IEEE/ACM International Conference on Big Data Computing, Applications and Technologies (BDCAT 2016)
13) International IEEE Symposium on Big Data Management and Analytics (BIDMA 2016)
14) The 21st IEEE International Conference on Parallel and Distributed Systems (ICPADS 2015)
15) IEEE Fourth International Congress on Big Data (BigData Congress 2015)
16) The 11th IEEE International Conference on eScience (IEEE eScience 2015)
17) The 27th International Conference on Scientific and Statistical Database Management (SSDBM 2015)
18) The First IEEE International Conference on Big Data Computing Service and Applications (IEEE BigDataService 2015)
19) The IEEE Sixth International Conference on Cloud Computing Technology and Science, (CloudCom 2014)
20) The 2014 Asia-Pacific Services Computing Conference (APSCC 2014)
21) IEEE Third International Congress on Big Data (BigData Congress 2014)
22) The 12th International Conference on Service Oriented Computing (ICSOC 2014)
23) The 11th International Conference on Service Oriented Computing (ICSOC 2013)
24) The Tenth International Conference on Service Computing (SCC 2013)
25) IEEE Second International Congress on Big Data (BigData Congress 2013)
26) The Tenth International Conference on Service Oriented Computing (ICSOC 2012)
27) The Ninth International Conference on Service Computing (SCC 2012)
28) The Ninth International Conference on Mobile Web Information Systems (MobiWIS 2012)
29) The 21st International Conference on Collaboration Technologies and Infrastructures (WETICE-2012)
30) The Seventh IEEE International Conference on e-Science (e-Science 2011)
31) The Third International Conference on Advances in Databases, Knowledge, and Data Applications (DBKDA 2011)
32) The Sixth IEEE International Conference on e-Science (e-Science 2010)
33) The 22nd the International Conference on Scientific and Statistical Database Management (SSDBM 2010)

◆ Workshop/Symposium Program Committee Member

1) The Third Big Data Analytic Technology for Bioinformatics and Health Informatics Workshop

(KDDBHI 2016)

2) The Third International Workshop on Algorithms and Systems for MapReduce and Beyond (BeyondMR 2016)
3) The Second International Workshop on Machine Learning, Optimization and Big Data (MOD 2016)
4) International Symposium on Foundations and Applications of Big Data Analytics (FAB 2015)
5) The First International Workshop on Machine learning, Optimization and Big Data (MOD 2015)
6) The Second International Workshop on Algorithms and Systems for MapReduce and Beyond (BeyondMR 2015)
7) The Seventh International Workshop on Context-Awareness and Personalization in Cloud and Service Computing (PCS 2014)
8) IEEE 2014 Eighth International Workshop on Scientific and Engineering Workflows: Advances in Data and Event-Driven Workflows (SWF 2014)
9) The Fourth International Workshop on e-Science and Social Network (eSoN 14)
10) The Sixth International Workshop on Personalization in Cloud and Service Computing (PCS 2013)
11) The Third International Workshop on Analyzing and Improving Collaborative eScience with Social Networks (eSoN 13)
12) The International Workshop on Sensor Data Processing and Integration (SDPI 2013)
13) IEEE 2013 Seventh International Workshop on Scientific and Engineering Workflows: Advances in Data and Event-Driven Workflows (SWF 2013)
14) The Fifth International Workshop on Workflow Management in Service and Cloud Computing (WMSC2013)
15) The Second international workshop on Scalable Workflow Enactment Engines and Technologies (SWEET'13)
16) The Second International Workshop on Workflow Models, Systems, Services and Applications in the Cloud (CloudFlow2013)
17) The Fourth International Workshop on Workflow Management in Service and Cloud Computing (WMSC2012)
18) Analyzing and Improving Collaborative eScience with Social Networks (eSoN 12)
19) The Sixth International Workshop on Scientific Workflows (SWF 2012)
20) The First international Workshop on Scalable Workflow Enactment Engines and Technologies (SWEET'12)
21) The First International Workshop on Workflow Models, Systems, Services and Applications in the Cloud (CloudFlow2012)
22) The First IEEE/ACM Workshop on the application of Social Networking concepts to Cluster, Cloud, Grid and Services Computing (SN4CCGridS)
23) The Fifth International Workshop on Scientific Workflows (SWF 2011)
24) The Third International Workshop on Workflow Management in Service and Cloud Computing (WMSC2011)
25) The Fourth International Workshop on Scientific Workflows (SWF 2010)

26) The Second International Workshop on Workflow Management in Service and Cloud Computing (WMSC2010)
27) The First International Workshop on Workflow Management in Service and Cloud Computing (WMSC2009)

- Journal Reviewer (Selected):
  1) IEEE Transactions on Services Computing
  2) IEEE Transactions on Automation Science and Engineering
  3) IEEE Transactions on Emerging Topics in Computing
  4) IEEE Transactions on Cloud Computing
  5) IEEE Transactions on Industrial Informatics
  6) IEEE/ACM Transactions on Computational Biology and Bioinformatics
  7) IEEE Transactions on NanoBioscience
  8) IEEE Internet Computing
  9) Journal of Computational Science, Elsevier Press
  10) Future Generation Computer Systems, Elsevier Press
  11) Journal of Grid Computing, Springer Press
  12) Information Systems Frontiers, Springer Press
  13) International Journal of Business Process Integration and Management (IJBPIM)
  14) IETE Technical Review, Taylor & Francis Group
  15) Enterprise Information Systems, Taylor & Francis Group
- Editorial Advisory Board Member of Book:
  1) Service-Oriented Methodology and Technologies for Cloud Computing, IGI Global Press
  2) Service-Driven Approaches to Architecture and Enterprise Integration, IGI Global Press
- Book Chapter Reviewer
  1) Guide to e-Science: Next Generation Scientific Research and Discovery. Springer, 2010
  2) Enabling Context-Aware Web Services: Methods, Architectures, and Technologies. Chapman and Hall/CRC 2009

Invited Presentations

- Embracing Big Data using Scalable Workflows, Bowie State University, Mar. 2015
- A Framework for Distributed Data-Parallel Execution in the Kepler Scientific Workflow System, Research Center for Cloud Computing, North China University of Technology, Beijing, Dec. 2013
- Facilitate Parallel Computation using Kepler Workflow System on Virtual Resources at The University of California Cloud (UCCloud) 2011 Summit, UCLA, Apr. 2011
- Distributed Execution Architectures in Kepler at Ninth Biennial Ptolemy Miniconference, UC Berkeley, Feb. 2011
- Accelerating the Scientific Exploration Process with Kepler Scientific Workflow System at The University of California Grid (UCGrid) 2009 Summit, UCLA, Apr. 2009

Research Projects

1) 2013.07 - present: Main researcher in DOE project: The Smart Manufacturing Leadership Coalition

(SMLC). Focus on scientific workflow scheduling in the cloud and its applications in smart manufacturing.

2) 2015.1 - 2015.8: Main researcher in DOE project: Integrated End-to-end Performance Prediction and Diagnosis for Extreme Scientific Workflows (IPPD). Focus on provenance based performance prediction in Kepler scientific workflow.
3) 2011.10 - 2015.8: Main researcher in NSF project: bioKepler: A Comprehensive Bioinformatics Scientific Workflow Module for Distributed Analysis of Large-Scale Biological Data. Focus on data parallel patterns in Kepler scientific workflow and its applications in bioinformatics.
4) 2011.3 - 2012.12: Main researcher in Moore Foundation project: Community Cyberinfrastructure for Advanced Microbial Ecology Research & Analysis (CAMERA). Focus on Kepler scientific workflow applications in bioinformatics domain, especially on virtualization environments.
5) 2010.3 - 2011.12: Main member in project: MapReduce for the Rest of Us: An Intuitive and Generic Architecture Facilitating Data- Intensive Applications in Metagenomics. Focus on Kepler scientific workflow system integration with MapReduce programming model and its application in bioinformatics domain.
6) 2009.3 - 2011.12: Main member in project: University of California Grid. Focus on Kepler scientific workflow applications in the UC Grid environments in computational chemistry domain.
7) 2008.11 - 2010.12: Main researcher in NSF project: REAP: Realtime Environment for Analytical Processing. Focus on Kepler master-slave distributed architecture and its parameter sweep applications in eco-informatics domain.
8) 2008.3 - 2011.9: Main researcher in NSF project: Kepler/CORE: Development of a Comprehensive, Open, Reliable, and Extensible Scientific Workflow Infrastructure. Focus on how to facilitate scientists to design scientific workflows and execute them efficiently using distributed computation techniques in Cluster, Grid and Cloud environments.
9) 2007.7 - 2008.3: Main researcher in project: The Open Platform for User-centric service Creation and Execution (OPUCE, a research project within the European Union Sixth Framework Programme for Research and Technological Development). Focus on context aware service composition. Application in Telecom domain. Collaboration mainly with Telefónica I+D, Telecom Italia Lab.
10) 2004.7 - 2006.12: Main researcher in project: Application Oriented Problem Solving System (supported by the National Natural Science Foundation Important Special Project of China). Focus on business-level service modeling and semantic based matching with Web services. Application in Bioinformatics domain. Collaboration with bioinformaticians of Beijing Genomics Institute, Chinese Academy of Sciences on service-oriented workflow.
11) 2006.1 - 2006.12: Main proposal writer and researcher in project: Service Virtualization and Exploratory Composition Mechanisms Facilitating End User Programming (supported by the Chinese Natural Science Foundation). Focus on business-level service model.
12) 2004.12 - 2005.9: Main member in project: Low Cost E-government Coordination Platform at Zhaoqing City (supported by Ministry of Science and Technology). Focus on user requirement analysis and business-level service module development. In collaboration with E-government experts of China National School of Administration.
13) 2003.5 - 2004.4: Main researcher in project: VINCA - Visual and Personalized Business-level

Composition Language for Chaining Web-based Services (supported by the ICT Key Foundation). Focus on VINCA specification.

14) 2002.10 - 2004.4: Main researcher in project: Technologies for Information Systems Evolution Based on Reflective Workflow and Dynamic Architecture (supported by the Chinese Natural Science Foundation). Focus on workflow dynamic modification engine.
15) 2002.5 - 2003.5: Main researcher in project: FLAME2008 - Flexible Semantic Web Service Management Environment for the Olympic Games Beijing 2008 (supported by the Key Scientific and Technological Program for the Tenth Five-Year Plan of China). Focus on dynamic workflow engine and workflow dynamic modification engine. Application in Sports Games domain. Collaboration with experts of the Chinese Olympic Committee.