CURRICULUM VITAE

JIANWU WANG
jianwu@umbc.edu

EDUCATION

Post-doc	2010	University of California, San Diego, Computer Software and Application
Post-doc	2008	Polytechnic University of Turin, Control and Computer Engineering
Ph.D.	2007	Chinese Academy of Sciences, Computer Software and Theory
B.A.	2001	Tianjin University, Computer Science and Technology

Experience in Higher Education

2024 - Present	Professor, Information Systems Department, UMBC
2024 - Present	Director, Center for Scalable Data and Computational Science (ScaleS), UMBC
2022 - Present	Liaison for Research Innovation, Information Systems Department, UMBC
2015 - Present	Director, Big Data Analytics Lab, UMBC
2022 - Present	Affiliate Faculty, Department of Computer Science and Electrical Engineering, UMBC
2021 - Present	Affiliate Faculty, the Center for Real-time Distributed Sensing and Autonomy (CARDS), UMBC
2018 - Present	Affiliate Faculty, the Joint Center for Earth Systems Technology (JCET), UMBC
2018 - Present	Affiliate Faculty, the NSF Center for Accelerated Real Time Analytics (CARTA), UMBC
2021 - 2024	Associate Professor, Information Systems Department, UMBC
2015 - 2021	Assistant Professor, Information Systems Department, UMBC
2012 - 2017	Adjunct Professor, North China University of Technology
2014 - 2015	Assistant Director for Research, Workflows for Data Science Center of Excellence, San Diego Supercomputer Center, University of California, San Diego
2015 - 2015	Associate Project Scientist, University of California, San Diego
2014 - 2015	Visiting Assistant Research Scientist, University of Maryland, College Park
2010 - 2015	Assistant Project Scientist, University of California, San Diego
2013 - 2013	Summer Session Lecturer, University of California, San Diego
2008 - 2010	Postdoctoral Researcher, University of California, San Diego
2007 - 2008	Postdoctoral Researcher, Polytechnic University of Turin

Professional Training

2023 - 2024	Participant, Leadership Development Program, Office of the Provost, UMBC
Summer 2020	Participant, COEIT PIVOT plus Workshop Series for Online Instruction, UMBC
Summer 2019	Participant, Educational Research Training on Parallel and Distributed Computing Curriculum, NSF-supported Center for Parallel and Distributed Computing Curriculum Development and Educational Resources (CDER)
2017-2019	Participant, Active Learning Inquiry Teaching (ALIT) Certificate Program, Faculty Development Center, UMBC
Spring 2013	Participant, The College Classroom Course for Teaching Certificate Program, Center for Teaching Development, UCSD

Honors Received

2023	Outstanding Editor Award, Future Generation Computer Systems (FGCS), Elsevier Press
2023	Nominee for PECASE Award, Office of Advanced Cyberinfrastructure (OAC), NSF
2022	Best Paper Award, 2022 IEEE/ACM 9th International Conference on Big Data Computing, Applications and Technologies (BDCAT 2022)
2020	CAREER Award, NSF
2019	Early-Career Faculty Excellence Award, UMBC

Research Support and/or Fellowships

A. <u>Non-UMBC</u> (total: $38,754)

2013 - 2014	Industrial Scale Demonstration of Smart Manufacturing Achieving Transformational Energy, $27,754, Department of Energy (DOE), Subcontract Co-PI.
2011 - 2013	Scientific Workflow Scheduling on Cloud, Amazon, $11,000, PI.

B. <u>External Funding after joining UMBC</u> $27,484,141 (21 grants) in total: $3,701,721 (13 grants) as PI, $14,865,850 (5 grants) as Co-PI, $8,916,570 (3 grants) as Senior Personnel

2024 - 2027	REU Site: Online Interdisciplinary Big Data Analytics in Science and Engineering, $362,755, National Science Foundation (NSF), Co-PI.
2023 - 2027	Collaborative Research: SCIPE: Enhancing the Transdisciplinary Research Ecosystem for Earth and Environmental Science with Dedicated Cyber Infrastructure Professionals, $999,668, National Science Foundation (NSF), Senior Personnel.
2022 - 2023	Travel: Student Travel Support for IEEE/ACM International Conferences on Utility and Cloud Computing (UCC 2022) and Big Data Computing, Applications and Technologies (BDCAT 2022), $32,000, National Science Foundation (NSF), Co-PI.
2022 - 2023	Multivariate Atmospheric Data Clustering for Studying Aerosol-cloud Interactions, $32,000, Department of Energy (DOE), Subcontract PI.
2022 - 2026	HDR Institute: HARP- Harnessing Data and Model Revolution in the Polar Regions, $13,700,002, National Science Foundation (NSF), Co-PI.
2022 - 2023	Machine Learning based Automatic Detection of Upper Atmosphere Gravity Waves from NASA Satellite Images, $187,620, National Aeronautics and Space Administration (NASA), Co-I.
2021 - 2022	Machine Learning and Cloud based Submeso Scale Ocean Eddy Detection, $10,000, Earth Science Information Partners (ESIP), PI
2021 - 2025	AI & Autonomy for Multi-Agent Systems, $7,616,902, Army Research Lab (ARL), Senior Personnel.
2021 - 2024	REU Site: Online Interdisciplinary Big Data Analytics in Science and Engineering, $293,710, National Science Foundation (NSF), PI.
2020 - 2025	CAREER: Big Data Climate Causality Analytics, $583,385, National Science Foundation (NSF), PI.
2020 - 2023	Developing Passive Satellite Cloud Remote Sensing Algorithms using Collocated Observations, Numerical Simulation and Deep Learning, $1,448,779, National Aeronautics and Space Administration (NASA), PI.
2020 - 2021	Multi-layered Intrusion Tolerant Byzantine Architecture for Bulk Power System Protective Relays, $157,771, Department of Energy (DOE), Subcontract PI.
2019 - 2022	MRI: Acquisition of a Heterogeneous GPU Cluster to Facilitate Deep Learning Research at UMBC, $300,000, National Science Foundation (NSF), Senior Personnel.
2019 - 2020	Climate Analytics on Google Cloud, $14,000, Google Cloud Research Credits Program, PI.

2018 - 2021	Efficient and Flexible Aggregation and Distribution of MODIS Atmospheric Products based on Climate Analytics-as-a- Service Framework, $418,058, National Aeronautics and Space Administration (NASA), PI.
2017 - 2021	CyberTraining: DSE: Cross-Training of Researchers in Computing, Applied Mathematics and Atmospheric Sciences using Advanced Cyberinfrastructure Resources, $547,970, National Science Foundation (NSF), PI.
2017 - 2020	MRI: Acquisition of Cutting-Edge GPU and Phi Nodes for the Interdisciplinary UMBC High Performance Computing Facility, $552,353, National Science Foundation (NSF), Co-PI.
2018	NASA Satellite Data Analytics, $31,700, The Earth on AWS Cloud Credits for Research program, PI.
2017 - 2018	Big Satellite Data based Climate Analytics, $20,000, Microsoft Cloud Research Credits Program, PI.
2017 - 2018	Low-Code Workflow Software for Life Sciences, $100,000, Maryland Industrial Partnerships (MIPS) Program, PI.
2015 - 2017	Industrial Scale Demonstration of Smart Manufacturing Achieving Transformational Energy, $31,588, Department of Energy (DOE), Subcontract PI.

C. Internal Funding at UMBC $148,072 (9 grants) in total

2025	CloudBot – A Smart Cloud Exploration System, UMBC Technology Catalyst Fund (TCF), $10,000, UMBC, PI.
2024 - 2025	Neurosymbolic AI for Scientific Discovery, COEIT Interdisciplinary Proposal Awards, $20,000, UMBC, Co-PI.
2024	COEIT Faculty Lab and Equipment Renewal Grant, UMBC COEIT, $12,701, UMBC, PI.
2023	COEIT Faculty Lab and Equipment Renewal Grant, UMBC COEIT, $25,528, UMBC, PI.
2022 - 2023	Center for Interdisciplinary Research in Dynamic Systems (CIRDS), UMBC COEIT Grant to Incubate New Centers, $30,000, UMBC COEIT, Co-PI.
2020	Summer Research Faculty Fellowship, $6,000, UMBC, PI.
2020	COEIT Summer Research Program for REU Site Proposal Development, $5,000, UMBC COEIT, PI.
2019	COEIT Faculty Lab and Equipment Renewal Grant, $8,217, UMBC COEIT, Co-PI.
2015 - 2016	Addressing Fundamental Sensing and Data Processing Problems in Sustainable Farms, UMBC COEIT Strategic Plan Implementation Grant, $35,626, UMBC COEIT, Co-PI.

Teaching

A. Courses Taught Outside of UMBC

Fall 2014	CMSC106 - Introduction to C Programming, Computer Science Department, University of Maryland, College Park (UMD)
Summer 2013	CSE21 - Mathematics for Algorithms and Systems Analysis, Department of Computer Science and Engineering, University of California, San Diego (UCSD)

B. Courses Taught at UMBC

Spring 2024	IS 789 - Big Data Fundamentals and Techniques
Fall 2023	IS 410/610 - Introduction to Database Design
Spring 2023	IS 410 - Introduction to Database Design
Fall 2022	IS 698/800 - Causal AI and Machine Learning

Spring 2021	IS 651 - Distributed Systems
Fall 2020	IS 651 - Distributed Systems
Spring 2020	IS 410/610 - Introduction to Database Design
Spring 2020	IS698/MATH700/PHYS650 - Special topics on Big Data + High-Performance Computing + Atmospheric Sciences, above teaching load course
Fall 2019	IS 789 - Big Data Fundamentals and Techniques
Fall 2019	IS 410 - Introduction to Database Design
Spring 2019	IS 651 - Distributed Systems
Spring 2019	IS698/MATH700/PHYS650 - Special topics on Big Data + High-Performance Computing + Atmospheric Sciences
Spring 2018	IS698/MATH700/PHYS650 - Special topics on Big Data + High-Performance Computing + Atmospheric Sciences
Spring 2017	IS 651 - Distributed Systems
Spring 2016	IS 651 - Distributed Systems
Fall 2015	IS 651 - Distributed Systems

C. **Designed Courses**

Spring 2022	Course Designer, IS 790 - Causal Artificial Intelligence, UMBC
Spring 2019	Course Designer, IS 789 - Big Data Fundamentals and Techniques, UMBC
Spring 2018	Course Designer, IS698/MATH700/PHYS650 - Special topics on Big Data + High-Performance Computing + Atmospheric Sciences, UMBC
Spring 2018	Course Designer, DATA 603 - Platforms for Big Data Processing, Division of Professional Studies, UMBC

D. **Other Teaching Related Activities**

Spring 2020	Guest Lecturer, Basics of Big Data, PHYS 650 - Special Topic on Application of Artificial Intelligence (AI) in Earth Sciences, JCET Seminar Series Spring 2020, UMBC
Spring 2016	Guest Lecturer, Cracking Big Data: Scalable Workflow Approach, IS 698 - Special topics on Translational Biomedical Informatics, UMBC
Fall 2010	Guest Lecturer, Scientific Workflow Scheduling, CSE 290 - Graduate Students Seminar on Scheduling Algorithms, Department of Computer Science and Engineering, UCSD

Ph.D. Students 6 graduated and 10 current

Wenbin Zhang	2016 - 2020	Committee Chair, Doctoral Dissertation: Learning Fairness and Graph Deep Generation in Dynamic Environments. 1st position after graduation: Postdoc, Carnegie Mellon University; 2nd position: Assistant Professor, Department of Computer Science, Michigan Technological University
Pei Guo	2017 - 2021	Committee Chair, Doctoral Dissertation: Scalable Multivariate Causality Discovery from Large-scale Global Spatiotemporal Climate Data. Position after graduation: Data Scientist at Wyze Labs
Xin Wang	2020 - 2022	Committee Chair (co-advisor: Sisi Duan), Doctoral Dissertation: Secure, Reproducible and Adaptive Machine Learning in Distributed Systems. Position after graduation: Postdoc at Tsinghua University
Qitao Xie	2016 - 2023	Committee Chair (Co-Chair: Ting Zhu), Doctoral Dissertation: Deep Learning Based Chatbot on FinTech Applications. Part-time Student
Xin Huang	2020 - 2023	Committee Chair (Co-Chair: Sanjay Purushotham), Doctoral Dissertation: Deep Learning based Cloud Retrieval Techniques using Multiple

	Satellite Remote Sensing Data, Position after graduation: Assistant Professor, Department of Computer and Information Sciences, Towson University	
Sahara Ali	2020 - 2024	Committee Chair, Doctoral Dissertation: Spatiotemporal Forecasting and Causality Methods for Arctic Amplification. Position after graduation: Assistant Professor, Department of Information Science, University of North Texas
Oluwatobiloba Odunsi	2021 - Present	Committee Chair, Pre-comprehensive
Xingyan Li	2021 - Present	Committee Chair, Pre-proposal
Seraj A.M. Mostafa	2021 - Present	Committee Chair, Candidacy
Azim Khan	2022 - Present	Committee Co-Chair (Chair: Aryya Gangopadhyay), Pre-proposal
Francis Nji	2022 - Present	Committee Chair (Co-Chair: Vandana Janeja), Pre-proposal
Joyce Padela	2022 - Present	Committee Chair, Pre-proposal
Omar Faruque	2022 - Present	Committee Chair, Pre-proposal
Akila Sampath	2023 - Present	Committee Chair (Co-Chair: Vandana Janeja), Pre-proposal
Mostafa Cham	2023 - Present	Committee Chair, Pre-comprehensive
Tartela Tabassum	2024 - Present	Committee Chair, Pre-comprehensive

Committee Members for Ph.D. Dissertation

Ibrahim Toure	IS Department, UMBC	Defended in 2017
John W Hebeler	IS Department, UMBC	Defended in 2017
Zhichuan Huang	CSEE Department, UMBC	Defended in 2017
Md Abdullah Khan	IS Department, UMBC	Defended in 2019
Yao Yao	CSEE Department, UMBC	Defended in 2020
Tao Ding	IS Department, UMBC	Passed proposal in 2020
Achala Denagamage	Physics Department, UMBC	Passed proposal in 2020
Wei Wang	CSEE Department, UMBC	Defended in 2021
Chamara Rajapakshe	Physics Department, UMBC	Defended in 2021
Carlos Barajas	Math&Stats Department, UMBC	Defended in 2022
Peichang Shi	IS Department, UMBC	Defended in 2022
Adeleke Ademakinwa	Physics Department, UMBC	Passed proposal in 2022
Argho Sarkar	IS Department, UMBC	Passed proposal in 2022
James Clavin	IS Department, UMBC	Passed proposal in 2022
Chhaya Kulkarni	IS Department, UMBC	Passed proposal in 2022
Daniel Kelly	Math&Stats Department, UMBC	Passed proposal in 2023
Pretom Roy Ovi	IS Department, UMBC	Passed proposal in 2023
Tatiana Della Porta	CSEE Department, UMBC	Passed proposal in 2023
Anamika Paul Rupa	IS Department, UMBC	Defended in 2023
Ziqi Yin	Atmospheric and Oceanic Sciences, CU Boulder	In preparation
Saydeh Karabatis	IS Department, UMBC	In preparation

Master Students

Homayra Alam	2022 - Present	Committee Chair
Garima Kumari	2022 - 2023	Committee Chair
Charan Duggirala	2022 - 2023	Committee Chair
Rohan Salvi	2022 - 2023	Committee Chair
Supriya Sangondimath	2019 - 2021	Committee Chair
Savio Kay	2017 - 2019	Committee Chair
Deepak Prakash	2017 - 2019	Committee Chair

Rishi Sankineni	2016 - 2017	Committee Chair	
Muthukumar Thevar	2016 - 2017	Committee Member (Co-Advisor)	
Sai C. Pallaprolu	2016 - 2017	Committee Member (Co-Advisor)	
Vishak Iyer	2016 - 2017	Committee Member	

Undergraduate Students

Brianna Grissom	2024	Research Mentor	REU Site
Kenia Munoz-Ordaz	2024	Research Mentor	REU Site
Julian Pulido	2024	Research Mentor	REU Site
Olivia Zhang	2024	Research Mentor	REU Site
Angelina Dewar	2023	Research Mentor	REU Site
Katherine Yi	2023	Research Mentor	REU Site
Zhengze Lu	2023	Research Mentor	REU Site
Tartela Tabassum	2023	Research Mentor	REU Site
Jorge López González	2022	Research Mentor	REU Site
Theodore Chapman	2022	Research Mentor	REU Site
Kathryn Chen	2022	Research Mentor	REU Site
Hannah Nguyen	2022	Research Mentor	REU Site
Logan Chambers	2022	Research Mentor	REU Site
Zainab Yekini	2022	Research Mentor	LSAMP Program
Eliot Kim	2021	Research Mentor	REU Site
Peter Kruse	2021	Research Mentor	REU Site
Skylar Lama	2021	Research Mentor	REU Site
Jamal Bourne	2021	Research Mentor	REU Site
Kai Morton	2020	Research Mentor	LSAMP Program
Sadia Rahman	2020	Research Mentor	
Anu Osunnuyi	2020	Research Mentor	LSAMP Program
Quentin Richards	2020	Research Mentor	LSAMP Program
Uchendu Uchendu	2019-2020	Research Mentor	REU Supplement Grant and LSAMP Program
Christine Abraham	2019-2020	Research Mentor	REU Supplement Grant
Achuna Ofonedu	2019, 2020	Research Mentor	Leadership Alliance Program
Imauri Motorin	2018	Research Mentor	
Jeong Ryu	2016	Research Mentor	

High School Students

Jonathan He	2024	Research Mentor	REU Site
Ray Chen	2023	Research Mentor	REU Site
Louis Lapp	2022-2024	Research Mentor	Ingenuity Project
Michael Hu	2021	Research Mentor	REU Site
Jason Guo	2020	Research Mentor	
Daudi Mwangi	2020-2021	Research Mentor	Ingenuity Project

Major Student Grants / Awards

- 2024/11: Xingyan Li, PhD student, Technuf Fellowship, Department of Information Systems, UMBC.
- 2023/05: Xin Huang, PhD student, Dissertation Fellowship, Summer 2023, UMBC Graduate School.
- 2023/03, Louis Lapp, mentored high school student, First place in the Mathematics and Computer Science category at the Morgan State University Science-Mathematics-Engineering Fair.

- 2022/12: Sahara Ali, PhD student, Best Paper Award at the 2022 IEEE/ACM 9th International Conference on Big Data Computing, Applications and Technologies (BDCAT 2022).
- 2022/08 - 2023/07: Xingyan Li, PhD student, Graduate Fellowship, Goddard Earth Sciences Technology and Research (GESTAR) II.
- 2021/12: Pei Guo, PhD student, finalist of the BenchCouncil 2021 Distinguished Doctoral Dissertation Award.
- 2021/11: Sahara Ali, PhD student, ESIP Community Fellow to help bridge the gap between informatics and Earth science.
- 2020/05: Wenbin Zhang, PhD student, Dissertation Fellowship, Summer 2020, UMBC Graduate School.
- 2019/08 - 2020/07: Pei Guo, PhD student, Graduate Fellowship, Joint Center for Earth Systems Technology (JCET), UMBC.

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications (140 papers in total, 86 after joining UMBC in 2015, [G] for mentored graduated students, [U] for mentored undergraduate students, [H] for mentored high-school students)

Citation information of the papers can be found at https://scholar.google.com/citations?hl=en&user=Q1VuLaMAAAAJ. 3000+ total citations and h-index value is 27 in November 2024.

A. **Edited Books and Conference Proceedings**
1. Arpit Jain, Abhinav Sharma, **Jianwu Wang**, Mangey Ram. Use of AI, Robotics, and Modern Tools to Fight Covid-19, ISBN: 978-8-7702-2443-7, River Publishers, 2020
2. Yixin Chen, Heiko Ludwig, Yicheng Tu, Usama M. Fayyad, Xingquan Zhu, Xiaohua Hu, Suren Byna, Xiong Liu, Jianping Zhang, Shirui Pan, Vagelis Papalexakis, **Jianwu Wang**, Alfredo Cuzzocrea, Carlos Ordonez. 2021 IEEE International Conference on Big Data (Big Data), Orlando, FL, USA, December 15-18, 2021. ISBN 978-1-6654-3902-2, IEEE, 2021.

B. **Peer-Reviewed Journal Papers**
1. Weilong Ding, Tianpu Zhang, Honghao Gao, Qi Yu, **Jianwu Wang**, Zhuofeng Zhao. Multi-Graph Spatio-Temporal Convolution for Traffic Flow Prediction Focusing on Edge Derived Imbalanced Data From Highway Electronics. *IEEE Transactions on Consumer Electronics*, IEEE, 2024.
2. Mitchell Bushuk, Sahara Ali [G], David A. Bailey, Qing Bao, Lauriane Batté, Uma S. Bhatt, Edward Blanchard-Wrigglesworth, Ed Blockley, Gavin Cawley, Junhwa Chi, François Counillon, Philippe Goulet Coulombe, Richard I. Cullather, Francis X. Diebold, Arlan Dirkson, Eleftheria Exarchou, Maximilian Göbel, William Gregory, Virginie Guemas, Lawrence Hamilton, Bian He, Sean Horvath, Monica Ionita, Jennifer E. Kay, Eliot Kim [U], Noriaki Kimura, Dmitri Kondrashov, Zachary M. Labe, WooSung Lee, Younjoo J. Lee, Cuihua Li, Xuewei Li, Yongcheng Lin, Yanyun Liu, Wieslaw Maslowski, François Massonnet, Walter N. Meier, William J. Merryfield, Hannah Myint, Juan C. Acosta Navarro, Alek Petty, Fangli Qiao, David Schröder, Axel Schweiger, Qi Shu, Michael Sigmond, Michael Steele, Julienne Stroeve, Nico Sun, Steffen Tietsche, Michel Tsamados, Keguang Wang, **Jianwu Wang**, Wanqiu Wang, Yiguo Wang, Yun Wang, James Williams, Qinghua Yang, Xiaojun Yuan, Jinlun Zhang, Yongfei Zhang. Predicting September Arctic Sea Ice: A Multi-Model Seasonal Skill Comparison. *Bulletin of the American Meteorological Society (BAMS),* American Meteorological Society, IF: 8.0, Accepted, 2024
3. Adeleke S. Ademakinwa, Zahid H. Tushar, Jianyu Zheng, Chenxi Wang, Sanjay Purushotham, **Jianwu Wang**, Kerry G. Meyer, Tamas Várnai, and Zhibo Zhang. Influence of Cloud Retrieval Errors Due to Three Dimensional Radiative Effects on Calculations of Broadband Cloud Radiative Effect, *EGUsphere*, DOI:10.5194/egusphere-2023-2218, 2024
4. Xin Wang [G], Pei Guo [G], Xingyan Li [G], Aryya Gangopadhyay, Carl Busart, Jade Freeman, **Jianwu Wang**. Reproducible and Portable Big Data Analytics in the Cloud, *IEEE Transactions on Cloud Computing*, vol. 11, no. 3, pages 2966-2982, IEEE, 2023
5. Xin Wang [G], Azim Khan [G], **Jianwu Wang**, Aryya Gangopadhyay, Carl Busart, Jade Freeman. An Edge-Cloud Integrated Framework for Flexible and Dynamic Stream Analytics. *Future Generation Computer Systems*, vol. 137, pages 323-335, Elsevier, DOI:10.1016/j.future.2022.07.023, 2022
6. Ziheng Sun, Laura Sandoval, Robert Crystal-Ornelas, S. Mostafa Mousavi, Jinbo Wang, Cindy Lin, Nicoleta Cristea, Daniel Tong, Wendy Hawley Carande, Xiaogang Ma, Yuhan Rao, James A. Bednar, Amanda Tan, **Jianwu Wang**, Sanjay Purushotham, Thomas E. Gill, Julien Chastang, Daniel Howard, Benjamin Holt, Chandana Gangodagamage, Peisheng Zhao, Pablo Rivas, Zachary Chester, Javier Orduz, Aji John. A Review of Earth Artificial Intelligence, *Computers & Geosciences*, vol. 159, no.105034, DOI:10.1016/j.cageo.2022.105034, Elsevier, 2022.

7. Jianyu Zheng, Xin Huang [G], Supriya Sangondimath [G], **Jianwu Wang**, Zhibo Zhang. Efficient and Flexible Aggregation and Distribution of MODIS Atmospheric Products Based on Climate Analytics as a Service Framework. Remote Sensing, vol. 13, no. 17: 3541. DOI:10.3390/rs13173541, 2021.

8. Pei Guo [G], Yiyi Huang, **Jianwu Wang**. Scalable and Flexible Two-Phase Ensemble Algorithms for Causality Discovery. *Big Data Research*, vol. 26, no. 100252, November 2021. DOI:10.1016/j.bdr.2021.100252

9. Yiyi Huang, Matthäus Kleindessner, Alexey Munishkin, Debvrat Varshney, Pei Guo [G], **Jianwu Wang**. Benchmarking of Data-Driven Causality Discovery Approaches in the Interactions of Arctic Sea Ice and Atmosphere. Data-driven Climate Sciences Section, Frontiers in Big Data, Frontiers, August 2021. DOI:10.3389/fdata.2021.642182

10. Jangho Lee, Yingxi R. Shi, Changjie Cai, Pubu Ciren, **Jianwu Wang**, Aryya Gangopadhyay, Zhibo Zhang. Machine Learning Based Algorithms for Global Dust Aerosol Detection from Satellite Images: Inter-Comparisons and Evaluation, *Remote Sensing*. 13(3): 456, https://doi.org/10.3390/rs13030456, 2021.

11. Jonathan N. Basalyga, Carlos A. Barajas, Matthias K. Gobbert, **Jianwu Wang**. Performance Benchmarking of Parallel Hyperparameter Tuning for Deep Learning based Tornado Predictions. *Big Data Research*, 25(100212), https://doi.org/10.1016/j.bdr.2021.100212, 2021.

12. Weilong Ding, Zhe Wang, Jun Chen, Yanqing Xia, **Jianwu Wang**, Zhuofeng Zhao. Potential Trend Discovery for Highway Drivers on Spatio-temporal Data. Accepted by *Wireless Networks*, Springer, 2020.

13. Weilong Ding, Zhuofeng Zhao, **Jianwu Wang**, Han Li. Task Allocation in Hybrid Big Data Analytics for Urban IoT Applications. *ACM/IMS Transactions on Data Science (TDS)*, 1(3), pages 1-22, ACM, 2020.

14. Wanghu Chen, Bo Yang, Jing Li, **Jianwu Wang**. An Approach to Detecting Diabetic Retinopathy based on Integrated Shallow Convolutional Neural Networks. *IEEE Access*, vol. 8, pages 178552-178562, IEEE, 2020.

15. Yan Tang, **Jianwu Wang**, Mai Nguyen, Ilkay Altintas. PEnBayes: A Multi-Layered Ensemble Approach for Learning Bayesian Network Structure from Big Data. *Sensors*, vol. 19, no. 20, article 4400. MDPI, 2019.

16. Hua Song, Jing Tian, Jingfeng Huang, Pei Guo [G], Zhibo Zhang, **Jianwu Wang**. Hybrid Causality Analysis of ENSO's Global Impacts on Climate Variables based on Data-driven Analytics and Climate Model Simulation. Interdisciplinary Climate Studies Section. *Frontiers in Earth Science*, vol. 7, Article 233, Frontiers, 2019.

17. Zhibo Zhang, Hua Song [G], Po-Lun Ma, Vincent E. Larson, Minghuai Wang, Xiquan Dong, **Jianwu Wang**. Subgrid Variations of the Cloud Water and Droplet Number Concentration over the Tropical Ocean: Satellite Observations and Implications for Warm Rain Simulations in Climate Models. *Atmospheric Chemistry and Physics*, 19(2), pages 1077-1096, 2019.

18. Wanghu Chen, Jing Li, Xintian Li, Lizhi Zhang, **Jianwu Wang**. Training Back Propagation Neural Networks in MapReduce on High-Dimensional Big Datasets with Global Evolution. *IEEE Access*, Vol. 7, pages 159855-159867, IEEE, 2019.

19. Prakashan Korambath, Hari S. Ganesh, **Jianwu Wang**, Michael Baldea, Jim Davis. Use of On-Demand Cloud Services to Model the Optimization of an Austenitization Furnace. *Smart and Sustainable Manufacturing Systems*, vol. 2, no. 1, pages 165-179, 2018.

20. Lina Zhou, Shimei Pan, **Jianwu Wang**, Athanasios V. Vasilakos. Machine Learning on Big Data: Opportunities and Challenges. Vol. 237, pages 350-361, *Neurocomputing*, Elsevier Press, 2017.

21. 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.

22. Chen Liu, **Jianwu Wang**, Yanbo Han. Discovery of Service HyperLinks with User Feedbacks for Situational Data Mashup. *International Journal of Database Theory and Application*, vol. 8, no. 4, pages 71-80, 2015.

23. 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.

24. **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, IEEE, 2014.

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

26. Chen Liu, **Jianwu Wang**, Yanbo Han. Mashroom+: An Interactive Data Mashup Approach with Uncertainty Handling. *Journal of Grid Computing*, 12(2), pages 221-244, Springer. DOI: 10.1007/s10723-013-9280-5, Springer, 2014.

27. 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, pages 408-464, DOI: 10.1007/s11227-014-1251-5, 2014.

28. 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. Approaches to Distributed Execution of Scientific Workflows in Kepler. In *Fundamenta Informaticae*, 128 (3), pages 281-302, 2013.

29. **Jianwu Wang**, Wanghu Chen, Yanbo Han. Domain-oriented and Customizable Service Model. *Journal of Computer Engineering*, 34(4), pages 122-124, 2008.

30. Chen Liu, Yanbo Han, Wanghu Chen, **Jianwu Wang**. MINI: An Ontology Evolution Algorithm for Reducing Impact Ranges. *Chinese Journal of Computers*, 31(5), 2008, pages 711-720, 2008.

31. Wanghu Chen, Yanbo Han, Jing Wang, Chen Liu, **Jianwu Wang**. Approach to Adaptive Service Matchmaking. *Journal of Southeast University*, 23(3), pages 408-412, 2007.

32. Yanbo Han, Hongcui Wang, **Jianwu Wang**, Shuying Yan, Cheng Zhang. An End-User-Oriented Approach to Exploratory Service Composition. *Journal of Computer Research and Development*, 43(11), pages 1895-1903, 2006.

33. Wanghu Chen, Chen Liu, Houfu Li, **Jianwu Wang**. An Approach to Dynamically Forming Semantic Infrastructure for Virtual Organizations. *Chinese Journal of Computers*, 19(7), pages 1127-1136, 2006.

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27. **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 Third International Workshop on Advances in the Kepler Scientific Workflow System and Its Applications (Kepler 2016)* at the International Conference on Computational Science 2016 (ICCS 2016), pages 700-711, Elsevier, 2016.

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29. 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, Elsevier, 2016.

30. **Jianwu Wang**, Daniel Crawl, Shweta Purawat, Mai Nguyen, Ilkay Altintas. Big Data Provenance: Challenges, State of the Art and Opportunities, In Proceedings of the *Second Workshop on Advances in Software and Hardware for Big Data to Knowledge Discovery (ASH 2015)* at the 2015 IEEE Conference on Big Data (BigData 2015), pages 2323-2330, IEEE, 2015.

31. 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, 2014.

32. 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, IEEE, 2014.

33. 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, IEEE, 2014.

34. 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, 2014.

35. 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, 2014.

36. **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), 2013.

37. 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, 2013.

38. 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, 2012.

39. **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, 2012.

40. **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, 2012.

41. Zhuohui Gan, **Jianwu Wang**, Nathan Salomonis, Ilkay Altintas, Andrew D. McCulloch, Alex Zambon. MAAMD: A Workflow to Standardize Meta-Analyses of Affymetrix Microarray Data. In Proceedings of *2012 IEEE Second International Conference on Healthcare Informatics, Imaging and Systems Biology (HISB 2012)*, pages 120-120, doi: 10.1109/HISB.2012.45, 2012.

42. 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, 2012.

43. 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, pages 21-30, 2011.

44. **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, IEEE, 2011.

45. **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), 2010.

46. **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, 2009.

47. **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, 2009.

48. **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, 2008.

49. Yanbo Han, **Jianwu Wang**, Jun Fang, Guiling Wang. Domain oriented Business Service Modeling and Service Virtualization. *Communications of China Computer Federation*, 4(4), pages 56-63, 2008.

50. **Jianwu Wang**, Jian Yu. A Business-Level Service Model Supporting End User Customization. In Proceedings of *the First International Workshop on Telecom Service Oriented Architectures (TSOA-07)* at the Fifth International Conference on Service-Oriented Computing (ICSOC 2007), pages 295-303, Springer, 2007.

51. 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), pages 10-17, 2006.

52. Jian Yu, **Jianwu Wang**, Yanbo Han, Shaohua Yang, Liyong Zhang. Developing End-User Programmable Service-Oriented Applications with VINCA. In Kurt Sandkuhl, Alexander Smirnov, and Herbert Weber (eds.), *The Knowledge Gap in Enterprise Information Flow: Information Logistic concepts and technologies for improving information flow in networked organizations: The 2nd Ljungby Workshop on Information Logistics*, Ljungby, Sweden, ISBN 91-975604-2-1, pages 26-42, 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)*, pages 23-28, IEEE, 2005.

54. **Jianwu Wang,** Yanbo Han, Jing Wang, 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, Springer, 2004.

55. Gang Li, Yanbo Han, Zhuofeng Zhao, **Jianwu Wang**, Roland M. Wagner. An Adaptable Service Connector Model. In Proceedings of *the First International Workshop on Semantic Web and Databases (SWDB 2003)* at VLDB 2003 Conference, 2003, pages 79-90, 2003.

F. <u>**Non-Peer-Reviewed Works**</u>
1. Achala W. Denagamage, Sahara Ali, Neranga Hannadigee, Xin Huang, Pei Guo, **Jianwu Wang**. Evaluation of Tropical Cloud Simulations between CMIP6 Models and Satellite Observations. Technical Report HPCF-2020-13, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2020.
2. Yiyi Huang, Matthäus Kleindessner, Alexey Munishkin, Debvrat Varshney, Pei Guo, **Jianwu Wang**. Benchmarking of Data-Driven Causality Discovery Approaches in the Interaction between Arctic Sea Ice and Atmosphere. Technical Report HPCF-2020-16, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2020.
3. Carlos A. Barajas, Matthias K. Gobbert, **Jianwu Wang**. Tornado Storm Data Synthesization using Deep Convolutional Generative Adversarial Network (DCGAN): Related Works and Implementation Details, Technical Report HPCF-2020-19, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2020.
4. Reetam Majumder, Redwan Walid, Jianyu Zheng, Carlos Barajas, Pei Guo, Chamara Rajapakshe, Aryya Gangopadhyay, Matthias K. Gobbert, **Jianwu Wang**, Zhibo Zhang, Kel Markert, Amita Mehta, Nagaraj K. Neerchal. Assessing Water Budget Sensitivity to Precipitation Forcing Errors in Potomac River Basin Using the VIC Hydrologic Model. Technical Report HPCF-2019-11, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2019.
5. Steven Randal Hussung, Mengxi Wu, Akila Sampath, Suhail Mahmud, Pei Guo, **Jianwu Wang**. Evaluation of Data-Driven Causality Discovery Approaches among Dominant Climate Modes. Technical Report HPCF-2019-12, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2019.
6. Carlos Barajas, Lipi Mukherjee, Pei Guo, Susan Hoban, Daeho Jin, Aryya Gangopadhyay, **Jianwu Wang**. Benchmarking Parallel Implementations of Cloud Type Clustering from Satellite Data, Technical Report HPCF-2018-12, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2018.
7. Peichang Shi, Qianqian Song, Janita Patwardhan, Zhibo Zhang, **Jianwu Wang**. Mineral Dust Detection Using Satellite Data, Technical Report HPCF-2018-13, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2018.
8. Hua Song, Jing Tian, Jingfeng Huang, **Jianwu Wang**, Zhibo Zhang. Causality Analysis of ENSO's Global Impacts on Climate Variables based on Data-driven Analytics and Climate Model Simulation, Technical Report HPCF-2018-14, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2018.
9. Yanbo Han, **Jianwu Wang**. Guest Editors' Introduction: Special Issue on Service and Cloud Based Data Integration. Journal of Grid Computing, 12(2), pages 187-189, 2014.

<u>**Presentations**</u>

A. <u>**Conference/Poster Presentations (Juried/Refereed, Selected)**</u>
1. Achala Denagamage, Zhibo Zhang, Michal Segal Rozenhaimer, **Jianwu Wang**, Sahara Ali. Evaluation of Low-Cloud and Warm Rain Simulation in CMIP6 Models through Comparisons with Satellite Observations, 13th Symposium on Aerosol - Cloud - Climate Interactions, American Meteorological Society (AMS) Annual Meeting, 2021

2. Yiyi Huang, Matthäus Kleindessner, Alexey Munishkin, Debvrat Varshney, Pei Guo, **Jianwu Wang**. Benchmarking of Data-Driven Causality Discovery Approaches in the Interactions of Arctic Sea Ice and Atmosphere, 20th Conference on Artificial Intelligence for Environmental Science, American Meteorological Society (AMS) Annual Meeting, 2021

3. **Jianwu Wang**, Jianyu Zheng, Xin Huang, Chamara Rajapakshe, Supriya Sangondimath, Sukhada Deshpande, Thomas Maxwell, Zhibo Zhang. Scalable Aggregation Service for MODIS Satellite Remote Sensing Data, Seventh Symposium on High Performance Computing for Weather, Water, and Climate, American Meteorological Society (AMS) Annual Meeting, 2021

4. Steve Hussung, Suhail Mahmud, Akila Sampath, Mengxi Wu, Pei Guo, **Jianwu Wang**. Evaluation of Data-Driven Causality Discovery Methods among Dominant Climate Modes, 19th Conference on Artificial Intelligence for Environmental Science, American Meteorological Society (AMS) Annual Meeting, Oral Presentation, Boston, MA. 2020.

5. Hua Song, **Jianwu Wang**, Jing Tian, Jingfeng Huang, Zhibo Zhang. Causality Analysis of ENSO's Global Impacts on Climate Variables based on Data-driven Analytics and Climate Model Simulation. The 1st NOAA Workshop on Leveraging AI in the Exploitation of Satellite Earth Observations & Numerical Weather Prediction, Poster, College Park, MD, 2019.

6. **Jianwu Wang**, Zhibo Zhang, Matthias K. Gobbert, and Aryya Gangopadhyay. Multidisciplinary Education on Big Data + High-Performance Computing+ Atmospheric Sciences. NSF EarthCube 2018 All Hands Meeting, Poster, Washington DC, 2018.

7. Zhong Liu, Shimei Pan, **Jianwu Wang**, Angela Li, David Meyer. Improving NASA Earth Science Data and Information Access Through Natural Language Processing Based Data Analysis and Visualization. NASA Goddard Workshop on Artificial Intelligence, Presentation, Greenbelt, MD, 2018.

8. Hua Song, **Jianwu Wang**, Jing Tian, Jingfeng Huang, Zhibo Zhang. Spatiotemporal Climate Data Causality Analytics: An Analysis of ENSO's Global Impacts, NASA Goddard Workshop on Artificial Intelligence, Poster, Greenbelt, MD, 2018.

9. Hua Song, Jing Tian, Jingfeng Huang, **Jianwu Wang**, Zhibo Zhang. Causality Analysis of ENSO's Global Impacts on Climate Variables based on Data-driven Analytics and Climate Model Simulation. American Geophysical Union (AGU) Fall Meeting, Oral Presentation, Washington DC, 2018.

10. **Jianwu Wang**, Zhibo Zhang, Matthias K. Gobbert, and Aryya Gangopadhyay. Multidisciplinary Education on Big Data + High-Performance Computing+ Atmospheric Sciences. American Geophysical Union (AGU) Fall Meeting, Oral Presentation, Washington DC, 2018.

11. Amrita Anam, **Jianwu Wang**, Qian Zhu, Aryya Gangopadhyay. Analyzing Large-scale Drug Related Data Supported by Graph Modeling: Preliminary Results, AMIA 2016 Annual Symposium, Chicago, IL, 2016.

12. Ilkay Altintas, Daniel Crawl, **Jianwu Wang**. A Distributed Data-Parallel Execution Framework in the Kepler Scientific Workflow System, The Eleventh Biennial Ptolemy Miniconference, Presentation, University of California, Berkeley, Berkeley, CA, 2015.

13. Ilkay Altintas, **Jianwu Wang**, Daniel Crawl, Shweta Purawat. bioKepler: A Comprehensive Bioinformatics Scientific Workflow Module for Distributed Analysis of Large-Scale Biological Data, The Eleventh Biennial Ptolemy Miniconference, Presentation, University of California, Berkeley, Berkeley, CA, 2015.

14. Mai Nguyen, Daniel Crawl, **Jianwu Wang**, Ilkay Altintas. Machine Learning Module for Big Data Analysis in Kepler. The Eleventh Biennial Ptolemy Miniconference, Presentation, University of California, Berkeley, Berkeley, CA, 2015.

15. Ilkay Altintas, **Jianwu Wang**, Mai Nguyen, Tolga Oztan, Douglas White. Workflow-driven science for the synthesis of ecology, biology and ethnographic data. Complex Systems Digital Campus (CS-DC) World e-Conference, ASU-SFI Center for Biosocial Complex Systems, Presentation, Phoenix, Arizona, USA, 2015.

16. Daniel Crawl, **Jianwu Wang**. Shweta Purawat, Ilkay Altintas. Bioinformatics Scientific Workflow Module for Distributed Analysis of Large-Scale Biological Data, DNA Day 2015, Poster, San Diego, CA, 2015.
17. **Jianwu Wang**, Daniel Crawl, Ilkay Altintas, Chad Berkley, Matt Jones. Distributed Execution Architectures in Kepler, The Ninth Biennial Ptolemy Miniconference. Presentation, University of California, Berkeley, Berkeley, CA, 2011

B. Conference/Poster Presentations (Non-Juried/Refereed, Selected)
1. **[Invited Talk]** Reproducible and Portable Big Data Analytics in the Cloud. AI-Ready Data Workshop: Navigating the Dynamic Frontier of Metadata and Ontologies, NSF HDR Institute of Data Driven Dynamical Design (ID4), Drexel University, 2024
2. **[Invited Talk]** Big Climate Data Analytics and Climate Causality Discovery. The International Workshop on Big Data Analytics, SSN College of Engineering, India, Invited Presentation, 2020
3. **[Invited Talk]** Facilitate Parallel Computation using Kepler Workflow System on Virtual Resource. The University of California Cloud (UCCloud) 2011 Summit, UCLA, Invited Presentation, 2011
4. **[Invited Talk]** Accelerating the Scientific Exploration Process with Kepler Scientific Workflow System, The University of California Grid (UCGrid) 2009 Summit, UCLA, Invited Presentation, 2009

C. Other Professional Presentations (Selected)
1. **[Invited Talk]** Exploring AI Techniques for Causal Understanding of Earth Processes and Multi-Satellite Earth Remote Sensing. Spring 2024 Machine Learning Seminar Series, Department of Mathematics and Statistics, UMBC, 2024
2. **[Invited Talk]** Exploring AI Techniques for Causal Understanding of Earth Processes and Multi-Satellite Earth Remote Sensing. Spring 2024 Computer Science Seminar Series, Virginia Tech University, 2024
3. **[Invited Talk]** Exploring AI Techniques for Causal Understanding of Earth Processes and Multi-Satellite Earth Remote Sensing. Spring 2024 EECS Graduate Seminar Series, University of California, Merced, 2024
4. **[Invited Talk]** AI Based Multi-satellite Earth Remote Sensing and Causal Understanding of Earth Processes. Visa Research AI Seminar, VISA, 2024
5. **[Invited Talk]** AI Based Multi-satellite Earth Remote Sensing and Causal Understanding of Earth Processes. Fall 2023 Data Science Seminar Series, Texas A&M Institute of Data Science (TAMIDS), Texas A&M University (TAMU), 2023
6. **[Invited Talk]** Big Data Analytics in the Cloud. Information Science and Systems Department, Morgan State University, 2021
7. **[Invited Talk]** Multidisciplinary Research and Education on Big Data + HPC + Atmospheric Sciences, Data Science Education and Workforce Working Group Webinar Series, Big Data South Hub, 2021
8. **[Invited Talk]** Data-Driven Sea Ice Forecasting and Causality Discovery. NASA GSFC Cryospheric Sciences Lab (615) Seminar, 2021
9. **[Invited Talk]** Developing Passive Satellite Cloud Remote Sensing Algorithms using Collocated Observations, Numerical Simulation and Deep Learning, NASA GSFC Climate & Radiation Laboratory (613) Seminar, 2021
10. **[Invited Talk]** Big Climate Data Analytics. Department of Information Sciences and Technology, George Mason University, 2021
11. **[Invited Talk]** Evaluation of Data-Driven Causality Discovery Methods for El Niño-Southern Oscillation, UMBC 2020 Earth Day Symposium, Invited Presentation, 2020.
12. **[Invited Talk]** Evaluation of Data-Driven Causality Discovery Methods for El Niño-Southern Oscillation, The Statistical and Applied Mathematical Sciences Institute (SAMSI) Causal Discovery Working Group, Invited Presentation, 2020.

13. **[Invited Talk]** Towards Open Smart Manufacturing, National Institute of Standards and Technology (NIST), Gaithersburg, MD, Invited Presentation, 2018.
14. **[Invited Talk]** Embracing Big Data using Scalable Workflows. Intelligent Automation, Inc. (IAI), Rockville, MD, Invited Presentation, 2016.
15. **[Invited Talk]** Embracing Big Data using Scalable Workflows. Bowie State University, Invited Presentation, 2015.

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY AND PROFESSION

Services to the Department

Spring 2022 - Present	Liaison for Research Innovation
Spring 2022 - Present	Committee Chair, Research Committee
Summer 2022	Committee Member, Merit Review Committee
Fall 2022 - Present	Committee Member, Promotion and Tenure Committee
Fall 2022 - Spring 2023	Committee Member, Launch Committee for New Faculty: Lei Zhang
Fall 2021 - Present	Department Mentor for Lujie Karen Chen
Spring 2021 - Present	Committee Member, IS On-Campus Graduate Committee
Fall 2020 - Spring 2021	Committee Member, Graduate Committee
Fall 2019 - Spring 2021	Committee Member, Assessment Committee
Fall 2017 - Spring 2020	Committee Member, Online Master Graduate Committee
Fall 2017 - Spring 2019	Committee Member, Research Committee
Fall 2018	Invited Panelist, Intro to TechResearch Session & Panel session, Information Systems Council of Majors (ISCOM)
Spring 2018	Department Representor, the UMBC Table Fair Experience for High School Students
Fall 2016 - Spring 2017	Committee Member, Faculty Search Committee (Data Science position)

Services to the College

2023	Committee Member, Committee for Senior Lecturer Promotion Review
2023	Committee Member, Search Committee for iHARP Executive Director
Fall 2022 - Spring 2023	Committee Member, Faculty Search Committee (Open Rank Faculty Positions on Renewable Energy and Sustainability)
Spring 2020	Committee Member, Evaluation Committee for Summer Undergraduate Research Program from the Leadership Alliance Consortium
Fall 2019 - Spring 2020	Committee Member, Faculty Search Committee (GPD for engineering DPS programs)

Services to the University

2024 - 2025	Chair, Research and Creative Achievement Council (RCAC)
2024 - 2025	Member, Research and Creative Achievement (RCA) Data Stewardship Committee
2024 - 2025	Member, International Travel Review Committee
2024 - 2025	Member, Research Center Policy Working Group
2024 - 2025	Member, Academic Analytics Faculty Review Committee (AAFRC)
2024 - 2025	Member, Research Park Advisory Committee (RPAC)
2024 - 2025	Member, Enterprise Risk Management - R-1 Status (RCA) Working Group
Fall 2023	Member, Research Computing Task Force
2022 - 2024	Member, Research and Creative Achievement Council
Spring 2023	Member, UMBC Interdisciplinary PhD Program Initial Planning Committee
2016 - 2024	Member, Faculty Governance Committee for the UMBC High Performance Computing Facility (HPCF)
2019, 2020	Research Mentor, Summer LSAMP Research Experience, USM Louis Stokes Alliances for Minority Participation (LSAMP) Program

Services to the Community

2020 - Present	Research Mentor, High School Student Research via Ingenuity Innovation Practicum, the Ingenuity Project, Baltimore, MD
2019, 2020	Research Mentor, Summer Undergraduate Research Program, the Leadership Alliance Consortium
2020	Team Mentor, Data Exploration for a Sustainable Planet, UMD Data Challenge 2020, College Park, MD
2018	Team Mentor, Tech + Research: Welcoming Women to Computing Research, College Park, MD

Services to the Profession

A. Editorship

2016 - Present	Editor, Future Generation Computer Systems (FGCS), Elsevier Press
2018 - Present	Editor, Frontiers in Big Data, Frontiers Press
2021 - Present	Editor, BenchCouncil Transactions on Benchmarks, Standards and Evaluations (TBench), Elsevier Press
2020	Book Editor, Use of AI, Robotics, and Modern Tools to Fight Covid-19, River Publishers
2020	Guest Editor, Special Issue on Benchmarking, Performance Tuning and Optimization for Big Data Analytics, Big Data Research, Elsevier Press
2020	Guest Associate Editor, Special Section on Computational Intelligence and Big Data for Scientific and Technological Resources and Services, IEICE Transactions on Information and Systems
2015 - 2017	Editor, Services Transactions on Internet of Things (STIOT)
2013 - 2016	Associate Editor, International Journal of Computers and Their Applications (IJCA)
2012 - 2015	Editor, Cluster Computing, Springer Press
2017 - 2018	Guest Editor, Special Issue on Big Data in Ubiquitous Computing, IEEE Transaction on Big Data
2014	Guest Editor, Special Issue on Service and Cloud Based Data Integration, Journal of Grid Computing, Springer Press

B. Conference Organization Committee

1. Publicity Chair, 23rd IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGrid 2023)
2. Publication Chair, 24th International Conference on Distributed Computing and Networking (ICDCN 2023)
3. Program Chair, 2022 IEEE/ACM 9th International Conference on Big Data Computing, Applications and Technologies (BDCAT 2022)
4. Publication Chair, 23rd International Conference on Distributed Computing and Networking (ICDCN 2022)
5. Workshop Chair, 2021 IEEE International Conference on Big Data (IEEE BigData 2021)
6. Poster Chair, 2020 IEEE International Conference on Big Data (IEEE BigData 2020)
7. Student Travel Award Chair, 2019 IEEE International Conference on Big Data (IEEE BigData 2019)
8. Poster Chair, 2019 IEEE 15th International eScience Conference (IEEE eScience 2019)
9. Student Travel Award Chair, 2017 IEEE International Conference on Big Data (IEEE BigData 2017)
10. Short Paper Track Chair, The Sixth IEEE International Congress on Big Data (BigDataCongress 2017)

11. Area Chair, Scientific Workflows, The 13th IEEE International Conference on Services Computing (SCC 2016)
12. Track Chair, Internet of Things (IoT) and Collaboration, The 13th EAI International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom 2017)
13. Poster Chair, 2016 IEEE International Conference on Big Data (IEEE BigData 2016)
14. Journal Special Issue Chair, The 14th IEEE International Conference on Ubiquitous Intelligence and Computing (IEEE UIC 2017)

C.   Workshop Co-Chair
1. National Symposium for Undergraduate Research in Data Science, Systems, and Security (REU Symposium), 2021 - Present
2. The International Workshop on Benchmarking, Performance Tuning and Optimization for Big Data Applications (BPOD), 2017 - 2022
3. The Third International Workshop on Advances in the Kepler Scientific Workflow System and Its Applications (Kepler 2016)
4. The International Workshop on Service and Cloud Based Data Integration (SCDI), 2012, 2014
5. The Second International Workshop on Advances in Data and Information Management: Recent Advances of Cloud Computing in Data and Information Management (ADIM 2011)

D.   Proposal/Panel/Tenure Review
1. Tenure Review for a Peer Institution in the University of California System, 2023
2. Research Faculty Promotion Review for a Peer Institution in Virginia, 2023
3. National Science Foundation (NSF), 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023
4. National Research and Development Agency (ANID) of Chile, 2022
5. Climate Change AI Innovation Grants Program, 2021, 2023
6. Army Research Office (ARO), 2019
7. Austrian Science Fund (FWF), 2019
8. National Aeronautics and Space Administration (NASA), 2018
9. Ontario Genomics Institute, Canada, 2014

E.   Conference Program Committee Member (Selected)
1. European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD), 2024-Present
2. International Conference on Pattern Recognition (ICPR), 2024-Present
3. The Conference on Uncertainty in Artificial Intelligence (UAI), 2023
4. International Joint Conference on Artificial Intelligence (IJCAI), 2023-Present
5. The Web Conference (Previously known as WWW conference), 2023-Present
6. SIAM International Conference on Data Mining (SDM), 2023
7. International Conference on Artificial Intelligence and Statistics (AISTATS), 2023
8. International Conference for High Performance Computing, Networking, Storage, and Analysis (SC), 2022
9. ACM International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL), 2021-Present
10. IEEE International Conference on Distributed Computing Systems (ICDCS), 2021
11. IEEE Global Communications Conference, Big Data Area (IEEE GLOBECOM), 2019-Present
12. IEEE International Conference on Big Data (IEEE BigData), 2015-Present
13. International Conference on Service Oriented Computing (ICSOC), 2012-Present
14. IEEE International Conference on eScience (IEEE eScience), 2010, 2011, 2016, 2019
15. International Conference on Parallel Processing (ICPP), 2019-2021

16. IEEE International Congress on Big Data (IEEE BigDataCongress), 2013-2019
17. The International Conference on Computational Science (ICCS), 2016-Present
18. IEEE International Conference on Data Engineering (ICDE), 2017
19. The 14th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC 2017)
20. The IEEE International Conference on Services Computing (SCC), 2012, 2013, 2017
21. The Second IEEE International Congress on Internet of Things Services (ICIOT 2017)
22. The IEEE International Conference on Big Data Computing Service and Applications (IEEE BigDataService), 2015-2017
23. The First International Conference on Internet of Things Services (S2 IOTS 2016)
24. The 18th International Conference on Information Integration and Web-based Applications & Services (iiWAS 2016)
25. The 10th International Conference on Asia-Pacific Services Computing (APSCC 2016)
26. The Third IEEE/ACM International Conference on Big Data Computing, Applications and Technologies (BDCAT 2016)
27. International IEEE Symposium on Big Data Management and Analytics (BIDMA 2016)
28. The 21st IEEE International Conference on Parallel and Distributed Systems (ICPADS 2015)
29. The 27th International Conference on Scientific and Statistical Database Management (SSDBM 2015)
30. The IEEE Sixth International Conference on Cloud Computing Technology and Science (CloudCom 2014)
31. The 2014 Asia-Pacific Services Computing Conference (APSCC 2014)
32. The Ninth International Conference on Mobile Web Information Systems (MobiWIS 2012)
33. The 21st International Conference on Collaboration Technologies and Infrastructures (WETICE-2012)
34. The Third International Conference on Advances in Databases, Knowledge, and Data Applications (DBKDA 2011)
35. The 22nd the International Conference on Scientific and Statistical Database Management (SSDBM 2010)

F. Workshop Program Committee Member (Selected)
1. The Third Big Data Analytic Technology for Bioinformatics and Health Informatics Workshop (KDDBHI 2016)
2. The International Workshop on Algorithms and Systems for MapReduce and Beyond (BeyondMR) 2015-2016
3. The International Workshop on Machine Learning, Optimization and Big Data (MOD), 2015-2016
4. The International Symposium on Foundations and Applications of Big Data Analytics (FAB 2015)
5. The International Workshop on Context-Awareness and Personalization in Cloud and Service Computing (PCS) 2013-2014
6. The International Workshop on Scientific Workflows (SWF), 2010-2014
7. The International Workshop on e-Science and Social Network (eSoN), 2012-2014
8. The International Workshop on Sensor Data Processing and Integration (SDPI 2013)
9. The International Workshop on Workflow Management in Service and Cloud Computing (WMSC), 2009-2013
10. The International Workshop on Scalable Workflow Enactment Engines and Technologies (SWEET), 2012-2013
11. The International Workshop on Workflow Models, Systems, Services and Applications in the Cloud (CloudFlow), 2012-2013
12. The First IEEE/ACM Workshop on the application of Social Networking concepts to Cluster, Cloud, Grid and Services Computing (SN4CCGridS)

G. Conference Session Chair (Selected)

1. 2016 IEEE International Conference on Big Data (IEEE BigData 2016)
2. The International Conference on Computational Science (ICCS 2016)
3. The 13th International Conference on Service Computing (SCC 2016)
4. IEEE Ninth International Conference on Web Services (ICWS 2011)

H. Book Editorial Advisory Board Member
1. Principles, Methodologies, and Service-Oriented Approaches for Cloud Computing, IGI Global Press, 2013
2. Service-Driven Approaches to Architecture and Enterprise Integration, IGI Global Press, 2013

I. Journal Reviewer (Selected)
1. ACM Computing Surveys
2. Journal of Grid Computing, Springer Press
3. IEEE Transactions on Services Computing
4. IEEE Transactions on Automation Science and Engineering
5. IEEE Transactions on Emerging Topics in Computing
6. IEEE Transactions on Cloud Computing
7. IEEE/ACM Transactions on Computational Biology and Bioinformatics
8. Information Systems Frontiers, Springer Press