Updated: 02/2026

Juncheng Wang

Affiliation

Assistant Professor 07/2023 - Present
Department of Computer Science
Hong Kong Baptist University (HKBU)
Office: Room 633, David C. Lam Building, Kowloon Tong, Hong Kong
Phone: +852 3411 5998
Email: jcwang@hkbu.edu.hk
Website: juncheng-wang.com

Interests

Network AI, online learning, distributed machine learning, stochastic optimization, mobile communications, and networked systems

Education

Ph.D. in Electrical and Computer Engineering 09/2018 - 05/2023
University of Toronto (UT), Toronto, Canada
Advisors: Prof. Ben Liang (IEEE Fellow) and Prof. Min Dong (IEEE Fellow)

M.Sc. in Electrical and Computer Engineering 09/2014 - 05/2017
University of Alberta (UA), Edmonton, Canada
Advisors: Prof. Wilsun Xu (IEEE Fellow) and Prof. Hao Liang

B.Eng. in Electrical Engineering 09/2010 - 06/2014
Shanghai Jiao Tong University (SJTU), Shanghai, China
Ranking: 1st in SJTU IEEE Honor Class of 2014 in Electrical Engineering

Industry

Internet of Things Engineer 05/2017 - 04/2018
Research and Development Department at Appropolis Inc., Calgary, Alberta, Canada

Funds

"1+1+1" Joint Research Collaboration Scheme GDSTC, HKBU, BNBU
PI, $ 1,000,000 RMB 01/2026 - 12/2028

Young Scientists Fund NSFC
PI, $ 300,000 RMB 01/2026 - 12/2028

General Program GDSTC
PI, $ 100,000 RMB 01/2026 - 12/2028

HK Young Scholars Fund Huawei
PI, $ 330,000 HKD 05/2025

Early Career Scheme (ECS) HK RGC
PI, $ 750,077 HKD 01/2025 - 12/2027

Publications

Submitted (in reverse chronological order)

Y. Liu, W. Qin, W. Bao, **J. Wang**✉, J. Guo, and M. Zhou, "Constrained online learning with hard constraints: A doubly-bounded queue approach," *IEEE Transactions on Networking (**TON**)*, revised, Jan. 2026.

Journal Articles (in reverse chronological order)

[J19] J. Wang, J. Guo, **J. Wang**, X. Ding, D. Li, and W. Wu, "Learning to incentivize: Convergence-guaranteed federated learning via client quality discovery," *IEEE Transactions on Mobile Computing (**TMC**)*, early access, Dec. 2025.

[J18] **J. Wang**✉, B. Liang, M. Dong, G. Boudreau, and A. Afana, "Age-of-information minimization with weight limits for semi-asynchronous online distributed optimization," *IEEE Transactions on Networking (**TON**)*, vol. 33, no. 6, pp. 3162-3178, Dec. 2025.

[J17] X. Wang, X. Xiao, X. Zhao, **J. Wang**, Y. Li, and Q. Shi, "Joint beamforming and data stream allocation for non-coherent joint transmission", *IEEE Transactions on Communications (**TCOM**)*, vol. 73, no. 12, pp. 15035-15052, Dec. 2025.

[J16] L. He, Z. Li, **J. Wang**✉, Z. Jia, Y. Wang, C. Yuen, and Z. Han, "Joint online optimization of power allocation and task scheduling for data offloading in LEO satellite networks," *IEEE Transactions on Network Science and Engineering (TNSE)*, vol. 13, pp. 5018-5037, Dec. 2025.

[J15] L. He, Y. Li, Z. Jia, **J. Wang**, M. Min, and Z. Han, "Optimal energy-saving multi-path routing for space-air-ground integrated networks," *IEEE Transactions on Vehicular Technology (TVT)*, early access, Dec. 2025.

[J14] Y. Li, J. Guo, Z. Tang, X. Ding, **J. Wang**, T. Wang, and W. Jia "Cloud-edge system for scheduling unpredictable LLM requests with combinatorial bandits," *IEEE Transactions on Services Computing (**TSC**)*, vol. 18, no. 6, pp. 3567-3580, Nov.-Dec. 2025.

[J13] L. He, S. Li, Z. Jia, **J. Wang**, and Z. Han, "Joint data compression and task scheduling for LEO satellite networks," *IEEE Transactions on Vehicular Technology (TVT)*, vol. 74, no. 9, pp.14991-14996, Sep. 2025.

[J12] **J. Wang**, M. Dong, B. Liang, G. Boudreau, and A. Afana, "Exploring temporal similarity for joint computation and communication in online distributed optimization," *IEEE Transactions on Networking (**TON**)*, vol. 33, no. 3, pp. 1309-1325, Jun. 2025.

[J11] L. He, Z. Jia, **J. Wang**, E. Lansard, Z. Han, and C. Yuen, "Joint power allocation and task scheduling for data offloading in non-geostationary orbit satellite networks," *IEEE Transactions on Network and Service Management (TNSM)*, vol. 22, no. 3, pp. 2882-2896, Jun. 2025.

[J10] **J. Wang**, B. Liang, M. Dong, G. Boudreau, and H. Abou-Zeid, "Joint online optimization of model training and analog aggregation for wireless edge learning," *IEEE/ACM Transactions on Networking (**TON**)*, vol. 32, no. 2, pp. 1212-1228, Apr. 2024.

[J9] **J. Wang**, M. Dong, B. Liang, G. Boudreau, and H. Abou-Zeid, "Hierarchical semi-online optimization for cooperative MIMO networks with information parsing," *IEEE Transactions on Wireless Communications (**TWC**)*, vol. 23, no. 3, pp. 1943-1958, Mar. 2024.

The above journal papers were published after I joined HKBU.

[J8] **J. Wang**, M. Dong, B. Liang, and G. Boudreau, "Periodic updates for constrained OCO with application to large-scale multi-antenna systems," *IEEE Transactions on Mobile Computing (**TMC**)*, vol. 22, no. 11, pp. 6705-6722, Nov. 2023.

[J7] **J. Wang**, M. Dong, B. Liang, G. Boudreau, and H. Abou-Zeid, "Delay-tolerant OCO with long-term constraints: Algorithm and its application to network resource allocation," *IEEE/ACM Transactions on Networking (**TON**)*, vol. 31, no. 1,

pp. 147-163, Feb. 2023.

[J6] **J. Wang**, B. Liang, M. Dong, and G. Boudreau, "Online multi-cell coordinated MIMO wireless network virtualization with imperfect CSI," *IEEE Transactions on Wireless Communications (**TWC**)*, vol. 21, no. 12, pp. 10455-10471, Dec. 2022.

[J5] **J. Wang**, B. Liang, M. Dong, G. Boudreau, and H. Abou-Zeid, "Online distributed coordinated precoding for virtualized MIMO networks with delayed CSI," *IEEE Wireless Communications Letter (WCL)*, vol. 11, no. 5, pp. 1012-1016, May 2022.

[J4] **J. Wang**, M. Dong, B. Liang, G. Boudreau, and H. Abou-Zeid, "Distributed coordinated precoding for MIMO cellular network virtualization," *IEEE Transactions on Wireless Communications (**TWC**)*, vol. 21, no. 1, pp. 106-120, Jan. 2022.

[J3] K.-L. Chen, Y. Guo, **J. Wang**, X. Yang, "Contactless islanding detection method using electric field sensors," *IEEE Transactions on Instrumentation and Measurement (TIM)*, vol. 70, pp. 1-13, Jan. 2021.

[J2] **J. Wang**, G. Geng, K.-L. Chen, H. Liang, and W. Xu, "Event-based non-intrusive home current measurement using sensor array," *IEEE Transactions on Smart Grid (**TSG**)*, vol. 9, no. 6, pp. 5878-5886, Nov. 2018.

[J1] G. Geng, **J. Wang**, K.-L. Chen, and W. Xu, "Contactless current measurement for enclosed multiconductor systems based on sensor array," *IEEE Transactions on Instrumentation and Measurement (TIM)*, vol. 66, no. 10, pp. 2627-2637, Oct. 2017.

Conference Articles (in reverse chronological order)

[C19] W. Qin, W. Bao, **J. Wang**✉, and M. Zhou, "Double queue for constrained online convex optimization: Bridging the best-of-two-worlds constraint violation," in *Proceedings of IEEE International Conference on Computer Communications (**INFOCOM**)*, Tokyo, Japan, May 2026. (18.9% acceptance rate)

[C18] **J. Wang**✉, Y. Liu, B. Liang, and M. Dong, "Constrained over-the-air model updating for wireless online federated learning with delayed information," in *Proceedings of IEEE International Conference on Computer Communications (**INFOCOM**)*, London, United Kingdom, May 2025. (18.7% acceptance rate)

[C17] Z. Li, L. He, **J. Wang**, Z. Jia, Y. Wang, and C. Yuen, "Online joint power allocation and task scheduling for LEO satellite networks," in *Proceedings of IEEE Wireless Communications and Networking Conference (WCNC)*, Milan, Italy, Mar. 2025.

[C16] **J. Wang**✉, B. Yan, and Y. Liu, "Doubly-bounded queue for constrained online learning: Keeping pace with dynamics of both loss and constraint," in Proceedings of *AAAI Conference on Artificial Intelligence (**AAAI**)*, Philadelphia, Pennsylvania, USA, Feb. 2025. (Theory paper)

[C15] W. Xu, **J. Wang**, B. Liang, G. Boudreau, and H. Sokun, "Distributed minimax fair optimization over hierarchical networks," in *Proceedings of International Conference on Parallel Processing (ICPP)*, Gotland, Sweden, Aug. 2024.

[C14] L. He, Z. Jia, **J. Wang**, F. Wang, E. Lansard, and C. Yuen, "Energy-efficient data offloading for earth observation satellite networks," in *Proceedings of IEEE Vehicular Technology Conference (VTC)*, Singapore, Jun. 2024.

[C13] Q. Song, W. Lin, **J. Wang**, and H. Xu, "Towards robust learning to optimize with theoretical guarantees," in *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, Seattle WA, USA, Jun. 2024. (Theory paper)

[C12] J. Geng, Y. Hou, X. Tao, **J. Wang**, and B. Luo, "Adaptive federated learning in heterogeneous wireless networks with independent sampling," in *Proceedings of IEEE International Conference on Communications (ICC)*, Denver, CO, USA, Jun. 2024.

[C11] Q. Song, **J. Wang**, J. Li, G. Liu, and H. Xu, "A learning-only method for multi-cell multi-user MIMO sum rate maximization," in *Proceedings of IEEE International Conference on Computer Communications (**INFOCOM**)*, Vancouver, Canada, May 2024. (19.6% acceptance rate)

[C10] X. Zhao, X. Wang, **J. Wang**, and Q. Shi, "A stochastic proximal WMMSE for ergodic sum rate maximization," in *Proceedings of IEEE International Conference on Acoustic, Speech and Signal Processing (ICASSP)*, Seoul, Korea, Apr. 2024.

[C9] X. Wang, X. Zhao, **J. Wang**, and Q. Shi, "WMMSE beamforming for user-centric cell-free networks with non-coherent joint transmission," in *Proceedings of IEEE Global Communications Conference (GLOBECOM)*, Kuala Lumpur, Malaysia, Dec. 2023.

The above conference papers were published after I joined HKBU.

[C8] **J. Wang**, B. Liang, M. Dong, G. Boudreau, and A. Afana, "Online distributed optimization with efficient communication via temporal similarity," in *Proceedings of IEEE International Conference on Computer Communications (**INFOCOM**)*, New York City, NY, USA, May 2023. (19.2% acceptance rate)

[C7] **J. Wang**, M. Dong, B. Liang, G. Boudreau, and H. Abou-Zeid, "Online model updating with analog aggregation in wireless edge learning," in *Proceedings of IEEE International Conference on Computer Communications (**INFOCOM**)*, online conference, May 2022. (19.9% acceptance rate)

[C6] **J. Wang**, B. Liang, M. Dong, G. Boudreau, and H. Abou-Zeid, "Semi-online precoding with information parsing for cooperative MIMO wireless networks," in *Proceedings of IEEE International Conference on Computer Communications (**INFOCOM**)*, online conference, May 2022. (19.9% acceptance rate)

[C5] **J. Wang**, B. Liang, M. Dong, G. Boudreau, and H. Abou-Zeid, "Delay-tolerant constrained OCO with application to network resource allocation," in *Proceedings of IEEE International Conference on Computer Communications (**INFOCOM**)*, online conference, May 2021. (19.9% acceptance rate)

[C4] **J. Wang**, M. Dong, B. Liang, and G. Boudreau, "Online precoding design for downlink MIMO wireless network virtualization with imperfect CSI," in *Proceedings of IEEE International Conference on Computer Communications (**INFOCOM**)*, online conference, Jul. 2020. (19.8% acceptance rate)

[C3] **J.Wang**, B. Liang, M. Dong, and G. Boudreau, "Online MIMO wireless network virtualization over time-varying channels with periodic updates," in *Proceedings of IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, online conference, May 2020.

[C2] **J. Wang**, M. Dong, B. Liang, and G. Boudreau, "Online downlink MIMO

wireless network virtualization in fading environments," in *Proceedings of IEEE Global Communications Conference (GLOBECOM)*, Waikoloa, Hawaii, USA, Dec. 2019.

[C1] J. Wang, **J. Wang**, and W. Chen, "Localization and navigation of intelligent wheelchair in dynamic environment," in *Proceeding of Chinese Intelligent Automation Conference*, Yangzhou, Jiangsu, China, Jul. 2013.

Patents

[P6] H. Abou-Zeid, G. Boudreau, M. Dong, B. Liang, and J. Wang, "Distributed coordinated downlink precoding for multi-cell MIMO wireless network virtualization," US Patent US12531597, **granted**, 2026.

[P5] H. Abou-Zeid, G. Boudreau, M. Dong, B. Liang, and J. Wang, "Delay-tolerant constrained online convex optimization," US Patent US12490203, **granted**, 2025.

[P4] G. Boudreau, M. Dong, B. Liang, and J. Wang, "Online MIMO wireless network virtualization with unknown channel information," US Patent US12003286, **granted**, 2024.

[P3] G. Boudreau, M. Dong, B. Liang, and J. Wang, "Online convex optimization with periodic updates for downlink multi-cell MIMO wireless network virtualization," US Patent US11979206, **granted**, 2024.

[P2] H. Abou-Zeid, G. Boudreau, M. Dong, B. Liang, and J. Wang, "Online optimization for joint computation and communication in edge learning," US Patent Application US20240346327, 2024.

[P1] H. Abou-Zeid, G. Boudreau, M. Dong, B. Liang, and J. Wang, "Hierarchical online convex optimization," US Patent Application US20240119355, 2024.

Awards

IEEE INFOCOM Distinguished TPC Member	2026
NSERC Postdoctoral Fellowship	2023
Natural Science and Engineering Research Council (NSERC), Canada nationwide 181 awardees, abandoned due to two-body problem	
IEEE INFOCOM Student Travel/Conference Grant	2020 - 2023
Ontario Graduate Scholarship	2020 - 2022
School of Graduate Studies Student Travel Grant, UT	2019
National champion for the Innovative Basketball Robot project	2012
China Robot Competition and RoboCup China Open 2012	
National champion for the Innovation project	2012
China Serving Robot Competition 2012	
Academic Excellent Scholarship, SJTU	2010 - 2013

TPC

INFOCOM 2026, AAAI 2026, ICDCS 2025

Reviewer

TON, JSAC, TMC, TPDS, TCOM, TWC, TBD, TVT, TSG, TIM, TSIPN, WCL

Students

Houxin Gong (RA, 2026 Ph.D., HKBU)	11/2025 - Present
Weiyi Qin (2025 Ph.D., HKBU)	09/2025 - Present

Courses

COMP4057 Distributed and Cloud Computing (instructor, HKBU)	2025 - 2026
COMP2037 Computing for Creatives II (instructor, HKBU)	2023 - 2025
COMP1015 Computing for Creatives I (instructor, HKBU)	2023 - 2025
ECE355 Signal Analysis and Communications (TA, UT)	2021 - 2022
ECE421 Introduction to Machine Learning, (TA, UT)	2021