

Wei Wang

PRESENT POSITION	Assistant Professor Department of Computer Science and Engineering Hong Kong University of Science and Technology Clear Water Bay, Hong Kong	<i>Office:</i> Room 3524 <i>Phone:</i> +852-2358-6972 <i>Email:</i> weiwa@cse.ust.hk <i>Web:</i> www.cse.ust.hk/~weiwa
EDUCATION	University of Toronto , Toronto, Ontario, Canada <i>Department of Electrical and Computer Engineering</i> ◇ Ph.D. , Electrical and Computer Engineering August 2015 ◇ <i>Dissertation:</i> “Fair Scheduling in Cloud Datacenters with Multiple Resource Types” ◇ <i>Advisors:</i> Baochun Li, Ben Liang ◇ <i>Thesis Committee:</i> Jorg Liebeherr, Ding Yuan, Rong Zheng (McMaster University) Shanghai Jiao Tong University , Shanghai, China <i>Department of Electrical and Computer Engineering</i> ◇ M.Eng. , Information Engineering March 2010 Shanghai Jiao Tong University , Shanghai, China <i>Department of Electrical and Computer Engineering</i> ◇ B.Eng. (<i>SJTU Distinguished Graduate Award</i>), Information Engineering June 2007	
PROFESSIONAL EXPERIENCE	Hong Kong University of Science and Technology , Clear Water Bay, Kowloon, Hong Kong Department of Computer Science and Engineering <i>Assistant Professor (tenure-track)</i> September 2015 – Present University of Toronto , Toronto, Ontario, Canada Department of Electrical and Computer Engineering <i>Research/Teaching Assistant</i> September 2010 – August 2015 Microsoft Server and Tools Business , Shanghai, China <i>Software Development Engineer (intern)</i> ◇ Placement and routing algorithms for Microsoft WorkFlow 4.0 March – June, 2010 ◇ Cloud identity service development for Microsoft BizTalk June – September, 2008 Microsoft Research Asia , Beijing, China <i>Research Assistant</i> March – June 2007	
HONORS AND AWARDS	◇ 100 Distinguished TPC members of IEEE INFOCOM 2018 2018 ◇ Chinese Government Award for Outstanding Students Abroad 2014 – 2015 ◇ Finalist for the Best Paper Award, USENIX ICAC 2013 2013 ◇ SGS Conference Grant, University of Toronto 2012, 2013 ◇ University of Toronto Fellowship 2010 – 2014	

◇ University Distinguished Graduate (2%), Shanghai Jiao Tong University	2007
◇ First Prize, China National Mathematical Contest in Modeling	2006
◇ First Prize, National Olympiad of Informatics, Jiangsu Province	2002, 2003

PUBLICATIONS

Underlined are students working with me.

Refereed Journal Articles (in reverse chronological order)

[J4] **Wei Wang**, Ben Liang, Baochun Li, “Optimal Online Multi-Instance Acquisition in IaaS Clouds,” *IEEE Transactions on Parallel and Distributed Systems*, vol. 26, no. 12, pp. 3407-3419, December 2015.

[J3] **Wei Wang**, Ben Liang, Baochun Li, “Multi-Resource Fair Allocation in Heterogeneous Cloud Computing Systems,” *IEEE Transactions on Parallel and Distributed Systems*, vol. 26, no. 10, pp. 2822-2835, October, 2015.

[J2] **Wei Wang**, Di Niu, Ben Liang, Baochun Li, “Dynamic Cloud Resource Reservation via IaaS Cloud Brokerage,” *IEEE Transactions on Parallel and Distributed Systems*, vol. 26, no. 6, pp. 1580-1593, June, 2015.

[J1] **Wei Wang**, Ben Liang, Baochun Li, “Designing Truthful Spectrum Double Auctions with Local Markets,” *IEEE Transactions on Mobile Computing*, vol. 13, no. 1, pp. 75-88, January 2014.

Refereed Papers in Conference Proceedings (in reverse chronological order)

[C28] Yinghao Yu, Renfei Huang, **Wei Wang**, Jun Zhang, Khaled Ben Letaief, “SP-Cache: Load-balanced, Redundancy-free Cluster Caching with Selective Partition”, in the *Proceedings of IEEE/ACM International Conference for High Performance Computing, Networking, Storage, and Analysis (SC18)*, Dallas, TX, November, 2018 (19% acceptance rate).

[C27] Chengliang Zhang, Huangshi Tian, **Wei Wang**, Feng Yan, “Stay Fresh: Speculative Synchronization for Fast Distributed Machine Learning,” in the *Proceedings of IEEE International Conference on Distributed Computing Systems (ICDCS 2018)*, Vienna, Austria, July, 2018 (20% acceptance rate).

[C26] Yinghao Yu, **Wei Wang**, Jun Zhang, Qizhen Weng, Khaled Ben Letaief, “OpuS: Fair and Efficient Cache Sharing for In-Memory Data Analytics,” in the *Proceedings of IEEE International Conference on Distributed Computing Systems (ICDCS 2018)*, Vienna, Austria, July, 2018 (20% acceptance rate).

[C25] Luping Wang, **Wei Wang**, “Fair Coflow Scheduling without Prior Knowledge,” in the *Proceedings of IEEE International Conference on Distributed Computing Systems (ICDCS 2018)*, Vienna, Austria, July, 2018 (20% acceptance rate).

[C24] Luping Wang, **Wei Wang**, Bo Li, “Utopia: Near-optimal Coflow Scheduling with Isolation Guarantee,” in the *Proceedings of IEEE INFOCOM’18*, Honolulu, HI, April, 2018 (19% acceptance rate).

- [C23] Chen Chen, **Wei Wang**, Bo Li, “Performance-Aware Fair Scheduling: Exploiting Demand Elasticity of Data Analytics Jobs,” in the *Proceedings of IEEE INFOCOM’18*, Honolulu, HI, April, 2018 (19% acceptance rate).
- [C22] Yinghao Yu, **Wei Wang**, Jun Zhang, Khaled Ben Letaief, “LERC: Coordinated Cache Management for Data-Parallel Systems,” in the *Proceedings of GLOBECOM’17*, Big Data Track, Singapore, December, 2017.
- [C21] Luping Wang, **Wei Wang**, Bo Li, “Towards Online Checkpointing Mechanism for Cloud Transient Servers,” in the *Proceedings of GLOBECOM’17*, Big Data Track, Singapore, December, 2017.
- [C20] Chen Chen, **Wei Wang**, Bo Li, “Speculative Slot Reservation: Enforcing Service Isolation for Dependent Data-Parallel Computations,” in the *Proceedings of the 37th IEEE International Conference on Distributed Computing Systems (ICDCS 2017)*, Research Track, Atlanta, GA, June, 2017 (17% acceptance rate).
- [C19] Yinghao Yu, **Wei Wang**, Jun Zhang, Khaled Ben Letaief, “LRC: Dependency-Aware Cache Management for Data Analytics Clusters,” in the *Proceedings of IEEE INFOCOM’17*, Atlanta, GA, May 2017 (21% acceptance rate).
- [C18] Chen Chen, **Wei Wang**, Shengkai Zhang, Bo Li, “Cluster Fair Queueing: Speeding up Data-Parallel Jobs with Delay Guarantees,” in the *Proceedings of IEEE INFOCOM’17*, Atlanta, GA, May 2017 (21% acceptance rate).
- [C17] **Wei Wang**, Shiyao Ma, Bo Li, Baochun Li, “Coflex: Navigating the Fairness-Efficiency Tradeoff for Coflow Scheduling,” in the *Proceedings of IEEE INFOCOM’17*, Atlanta, GA, May 2017 (21% acceptance rate).
- [C16] **Wei Wang**, A-Long Jin, “Friends or Foes: Revisiting Strategy-Proofness in Cloud Network Sharing,” in the *Proceedings of the 24th IEEE International Conference on Network Protocols (ICNP 2016)*, Singapore, November 2016 (20% acceptance rate).
- [C15] **Wei Wang**, Baochun Li, Ben Liang, Jun Li, “Multi-Resource Fair Sharing for Datacenter Jobs with Placement Constraints,” in the *Proceedings of IEEE/ACM International Conference for High Performance Computing, Networking, Storage and Analysis (SC16)*, Salt Lake City, UT, November 2016 (18% acceptance rate).
- [C14] **Wei Wang**, Baochun Li, Ben Liang, Jun Li, “Towards Multi-Resource Fair Allocation with Placement Constraints,” poster paper in the *Proceedings of the ACM SIGMETRICS’16*, Antibes Juan-les-Pins, France, June 2016 (24% acceptance rate).
- [C13] **Wei Wang**, Chen Feng, Baochun Li, Ben Liang, “On the Fairness-Efficiency Tradeoff for Packet Processing with Multiple Resources,” in the *Proceedings of the 10th ACM International Conference on emerging Networking EXperiments and Technologies (CoNEXT)*, Sydney, Australia, December 2014 (20% acceptance rate).

- [C12] **Wei Wang**, Baochun Li, Ben Liang, “Dominant Resource Fairness in Cloud Computing Systems with Heterogeneous Servers,” in the *Proceedings of IEEE INFOCOM’14*, Toronto, Canada, April 2014 (19% acceptance rate).
- [C11] **Wei Wang**, Ben Liang, Baochun Li, “Low Complexity Multi-Resource Fair Queueing with Bounded Delay,” in the *Proceedings of IEEE INFOCOM’14*, Toronto, Canada, April 2014 (19% acceptance rate).
- [C10] **Wei Wang**, Baochun Li, Ben Liang, “Multi-Resource Round Robin: A Low Complexity Packet Scheduler with Dominant Resource Fairness,” in the *Proceedings of the 21st IEEE International Conference on Network Protocols (ICNP)*, Göttingen, Germany, October 2013 (18% acceptance rate).
- [C9] **Wei Wang**, Baochun Li, Ben Liang, “To Reserve or Not to Reserve: Optimal Online Multi-Instance Acquisition in IaaS Clouds,” in the *Proceedings of the 10th USENIX International Conference on Autonomic Computing (ICAC)*, San Jose, CA, June 2013 (22% acceptance rate; one of the three **Best Paper Award Finalists**).
- [C8] **Wei Wang**, Ben Liang, Baochun Li, “Multi-Resource Generalized Processor Sharing for Packet Processing,” in the *Proceedings of the 21st ACM/IEEE International Symposium on Quality of Service (IWQoS)*, Montreal, Canada, June 2013 (28% acceptance rate).
- [C7] **Wei Wang**, Ben Liang, Baochun Li, “Revenue Maximization with Dynamic Auctions in IaaS Cloud Markets,” in the *Proceedings of the 21st ACM/IEEE International Symposium on Quality of Service (IWQoS)* (short paper), Montreal, Canada, June 2013.
- [C6] **Wei Wang**, Ben Liang, Baochun Li, “On Fairness-Efficiency Tradeoffs for Multi-Resource Packet Processing,” invited paper in the *Proceedings of the 3rd IEEE International Workshop on Data Center Performance (DCPerf)*, in conjunction with *IEEE ICDCS 2013*, Philadelphia, PA, July 2013.
- [C5] **Wei Wang**, Di Niu, Baochun Li, Ben Liang, “Dynamic Cloud Resource Reservation via Cloud Brokerage,” in the *Proceedings of the 33rd International Conference on Distributed Computing Systems (ICDCS)*, Philadelphia, PA, July 2013 (13% acceptance rate).
- [C4] **Wei Wang**, Baochun Li, Ben Liang. “Towards Optimal Capacity Segmentation with Hybrid Cloud Pricing,” in the *Proceedings of the 32nd International Conference on Distributed Computing Systems (ICDCS)*, Macau, China, June 2012 (13% acceptance rate).
- [C3] **Wei Wang**, Baochun Li, Ben Liang. “District: Embracing Local Markets in Truthful Spectrum Double Auctions,” in the *Proceedings of the 8th IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON)*, Salt Lake City, UT, June 2011 (22% acceptance rate).
- [C2] Qingjiang Shi, Chen He, Hongyang Chen, Lingge Jiang, **Wei Wang**, “Sequential Greedy Localization in Wireless Sensor Networks with Inaccurate Anchor Positions,” in the *Proceedings of IEEE Globecom’09*, Honolulu, HI, December 2009 (34% acceptance rate).

[C1] **Wei Wang**, Chen He. “A Noncooperative Spectrum Sensing Game with Maximum Network Throughput,” in the *Proceedings of IEEE GLOBECOM’09*, Honolulu, HI, December, 2009 (34% acceptance rate).

PATENT [P1] **Wei Wang**, Chen He, Lingge Jiang, “An Optimal Spectrum Sensing Policy with Maximum Network Throughput in Spectrum Agile Networks,” China Patent CN101730254A, June 9, 2010.

TEACHING EXPERIENCE

Hong Kong University of Science and Technology

- ◇ COMP3511: *Operating System* Spring, 2018
- ◇ COMP4651: *Cloud Computing and Big Data Systems* Spring & Fall, 2017
- ◇ COMP4621: *Computer Communication Networks I* Summer 2016
- ◇ COMP6611B: *Topics on Cloud Computing and Data Analytics Systems* Fall 2015, 2016

University of Toronto (Teaching Assistant)

- ◇ APS105 *Computer Fundamentals* Fall 2010 – 2014
- ◇ ECE 344S *Operating Systems* Spring 2011, 2012
- ◇ ECE297 *Communication and Design* Spring 2013, 2014

ADVISING AND SUPERVISORSHIP

Current Students in the Doctor of Philosophy Program

<i>Name</i>	<i>Duration of Study</i>
Huangshi Tian	September 2017 – Present
Qizhen Weng	September 2017 – Present
Chengliang Zhang	September 2016 – Present
Da Yan	September 2016 – Present
Mingzhe Li (HKUST-SUSTech Joint PhD Program)	September 2016 – Present
Xiandong Qi (HKUST-SUSTech Joint PhD Program)	September 2016 – Present
Yinghao Yu (Co-supervised with Prof. Khaled Ben Letaief)	September 2015 – Present
Chen Chen (Co-supervised with Prof. Bo Li)	September 2014 – Present

Student Supervision Achievements

Hong Kong PhD Fellowship Scheme (3-year fellowship for top PhD students in Hong Kong)

<i>Name of Awardee</i>	<i>Duration of Fellowship</i>
Huangshi Tian	2017 – 2020
Qizhen Weng	2017 – 2020
Chengliang Zhang	2016 – 2019
Yinghao Yu	2015 – 2018

IEEE INFOCOM’17 Best-In-Session Presentation Award May 2017

- ◇ Chen Chen, for his talk entitled “Cluster Fair Queueing: Speeding up Data-Parallel Jobs with Delay Guarantees,” in Conference Session *Cloud Computing I*.
- ◇ Yinghao Yu, for his talk entitled “LRC: Dependency-Aware Cache Management for Data Analytics Clusters,” in Conference Session *Big Data Processing*.

Ph.D. Defense Committees Served

Li Chen, 2018

Jingjie Jiang, Wei Bai, Yi Zhang, 2017

Zhehui Wang, Zhice Yang, 2016

PROFESSIONAL SERVICES

Editorial Board

- ◇ Editor, China Communications 2017 – Present

Conference Organization

- ◇ Finance Chair, the 1st ACM Asia-Pacific Workshop on Networking (APNet 2017)
- ◇ Finance Chair, the 25th IEEE International Conference on Network Protocols (ICNP 2017)
- ◇ Student Travel Grant Chair, the 7th ACM SIGOPS Asia-Pacific Workshop on Systems (AP-Sys 2016)
- ◇ Student organizer, IEEE INFOCOM 2014
- ◇ Student organizer, IEEE INFOCOM 2014 TPC Meeting
- ◇ Student organizer, the 21st IEEE/ACM International Symposium on Quality of Service (IWQoS 2013)
- ◇ Student organizer, the 22nd ACM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2012)

Membership in Technical Program Committee

- ◇ IEEE INFOCOM 2019
- ◇ The 26th IEEE International Conference on Network Protocols (ICNP 2018)
- ◇ The 28th ACM SIGMM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2018)
- ◇ IEEE INFOCOM 2018
- ◇ IEEE ICNP 2017 Workshop on Machine Learning and Artificial Intelligence in Computer Networks (ML&AI @ Network 2017)
- ◇ The 25th IEEE International Conference on Network Protocols (ICNP 2017)
- ◇ IEEE GLOBECOM 2017 Next-Generation Networking and Internet Symposium
- ◇ The 27th ACM SIGMM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2017)
- ◇ The 26th International Conference on Computer Communication and Networks (ICCCN 2017)
- ◇ IEEE International Conference on Cloud Engineering (IC2E) 2017
- ◇ IEEE ICNP Workshop on Machine Learning in Computer Networks (NetworkML) 2016
- ◇ The 25th International Conference on Computer Communication and Networks (ICCCN 2016), Hot Topics in Networking Track (HOT)
- ◇ IEEE GLOBECOM 2015 Communications Software Services and Multimedia Applications (CSSMA) Symposium

Reviewer for Journal Manuscript Submissions

- ◇ IEEE/ACM Transactions on Networking
- ◇ IEEE Transactions on Parallel and Distributed Systems
- ◇ IEEE Journal on Selected Areas in Communication
- ◇ IEEE Transactions on Cloud Computing
- ◇ IEEE Transactions on Mobile Computing
- ◇ IEEE Transactions on Knowledge and Data Engineering
- ◇ IEEE Transactions on Information Forensics & Security
- ◇ IEEE Transactions on Big Data
- ◇ IEEE Transactions on Services Computing
- ◇ IEEE Communications Letters
- ◇ Springer Multimedia Systems
- ◇ Springer Journal of Cloud Computing: Advances, Systems and Applications
- ◇ Springer Peer-to-Peer Networking and Applications

Reviewer for Conference Manuscript Submissions

ACM CoNEXT, ACM SIGMETRICS, ACM MobiCom, ACM Multimedia, ACM MMSys, ACM NOSSDAV, IEEE INFOCOM, IEEE ICNP, IEEE ICDCS, IEEE IWQoS, IEEE Cloud, IEEE SECON, IEEE MASS, IEEE GLOBECOM, IEEE ICCCN, IEEE ICC, IEEE ICME, IEEE NetCod, IFIP Networking, IEEE ChinaSIP.

MEMBERSHIPS	IEEE Member	2015 – Present
	IEEE Student Member	2010 – 2015

EXTERNAL RESEARCH FUNDING	“Performance-Centric Scheduling with Service Guarantees for Datacenter Jobs,” Microsoft Research Asia Collaborative Research Program, 2016 – 2017.
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