

# Hao Wang

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AFFILIATION	Edward S. Rogers Sr. Department of Electrical and Computer Engineering University of Toronto 10 King's College Road Toronto, Ontario M5S 3G4, Canada	<i>Email:</i> haowang@ece.utoronto.ca  <i>Web:</i> <a href="http://www.haow.ca/">http://www.haow.ca/</a> <i>Mobile:</i> +1 (647) 891-0836
PERSONAL INFORMATION	<i>Citizenship</i> Chinese	
EDUCATION	<b>University of Toronto</b> , Toronto, Ontario, Canada <i>Department of Electrical and Computer Engineering</i> <ul style="list-style-type: none"><li>◇ <b>Ph.D. candidate</b>, Electrical and Computer Engineering, Sept. 2015 – Present<ul style="list-style-type: none"><li>▷ <i>Advisor:</i> Baochun Li, Department of Electrical and Computer Engineering</li></ul></li> <b>Shanghai Jiao Tong University</b>, Shanghai, People's Republic of China <i>School of Electronic Information and Electrical Engineering</i><ul style="list-style-type: none"><li>◇ <b>M.Engr.</b>, Software Engineering, Mar. 2015<ul style="list-style-type: none"><li>▷ <i>Dissertation:</i> "Generic and Accurate Traffic Prediction for Data-Parallel Cluster Computing"</li><li>▷ <i>Advisor:</i> Haibing Guan, Department of Computer Science Zhengwei Qi, School of Software Engineering</li></ul></li><li>◇ <b>B.Engr.</b>, Information Security, Jul. 2012</li></ul></ul>	
RESEARCH INTERESTS	Large-scale data analytics, machine learning system, distributed computing, cloud computing, datacenter networking.	
HONOURS AND AWARDS	<ul style="list-style-type: none"><li>◇ <i>Best In-session Presentation Award</i>, INFOCOM'19, IEEE, 2019.</li><li>◇ <i>Doctoral Completion Award</i>, ECE Department, University of Toronto, 2019.</li><li>◇ <i>SGS Conference Grant</i>, School of Graduate Studies, University of Toronto, 2018.</li><li>◇ <i>Student Scholarships</i>, SoCC'18, ACM, 2018.</li><li>◇ <i>University of Toronto Fellowship</i>, Department of ECE, University of Toronto, Sept. 2015 – Present.</li><li>◇ <i>Edward S. Rogers Sr. Graduate Scholarships</i>, University of Toronto, Sept. 2015 – Present.</li><li>◇ <i>Yunfeng Prize in the 2nd Aliyun Cloud Computing Developer Competition</i> (Top 1%), Alibaba Cloud Inc., 2013.</li><li>◇ <i>Second-Class Postgraduate Scholarship</i>, Shanghai Jiao Tong University, 2012.</li><li>◇ <i>The 3rd Prize in the 4th National College Information Security Contest</i>, 2011.</li><li>◇ <i>Second-Class Academic Excellence Scholarship</i>, Shanghai Jiao Tong University, 2009.</li></ul>	

## RESEARCH EXPERIENCE

**Research Assistant**, supervised by Prof. Baochun Li  
*University of Toronto, Toronto* **Sept. 2015 – Present**

**Teaching Assistant** **Sept. 2015 – Present**  
*University of Toronto, Toronto*

▷ ECE 444: Software Engineering	<b>Fall 2017, Fall 2018, Fall 2019</b>
▷ CSC 369: Operating Systems	<b>Summer 2017</b>
▷ ECE 454: Computer Systems Programming	<b>Fall 2018</b>
▷ ESC 499: Engineering Science Final Year Project	<b>Oct. 2016 – Apr. 2017</b>
▷ ECE 344: Operating Systems	<b>Fall 2016</b>
▷ CSC 343: Introduction to Databases	<b>Summer 2016</b>
▷ ECE 353: Systems Software	<b>Winter 2016, Winter 2017, Winter 2018</b>
▷ CSC 458: Computer Networks	<b>Fall 2015</b>

**Research Intern**, supervised by Dr. Yongqiang Xiong **Aug. 2013 – Aug. 2014**  
*Microsoft Research Asia, Beijing, P. R. China*

**Visiting Research Assistant**, supervised by Prof. Kai Chen **Nov. 2013 – Dec. 2014**  
*Hong Kong University of Science and Technology, Hong Kong, P. R. China*

**Full-Stack Developer** **Jul. 2013 – Nov. 2013**  
*Ramy Tech Inc., Shanghai, P. R. China*

**Development Intern** **Dec. 2011 – Dec. 2012**  
*Intel Asia-Pacific Research and Development Ltd., Shanghai, P. R. China*

**Undergraduate Research Assistant**, Supervised by Dr. Xiaochao Zi **Nov. 2009 – Nov. 2010**  
*Shanghai Jiao Tong University, Shanghai, P. R. China*

## PUBLICATIONS

◇ **Journal Articles** (in reverse chronological order)

[J1] **Hao Wang**, Baochun Li. “Mitigating Bottlenecks in Wide Area Data Analytics via Machine Learning,” in *IEEE Transactions on Network Science and Engineering*, 2018.

[J2] Wei Bai, Li Chen, Kai Chen, Dongsu Han, Chen Tian, **Hao Wang**. “Information-Agnostic Flow Scheduling for Commodity Data Centers,” in *IEEE/ACM Transactions on Networking (ToN)*, 2017.

[J3] Hong Zhang, Kai Chen, Wei Bai, Dongsu Han, Chen Tian, **Hao Wang**, Haibing Guan, Ming Zhang. “Guaranteeing Deadlines for Inter-Datacenter Transfers,” in *IEEE/ACM Transactions on Networking (ToN)*, 2016

[J4] Shuihai Hu, Kai Chen, Haitao Wu, Wei Bai, Chang Lan, **Hao Wang**, Hongze Zhao, Chuanxiong Guo. “Explicit Path Control in Commodity Data Centers: Design and Applications,” in *IEEE/ACM Transactions on Networking (ToN)*, 2015

[J5] Yang Peng, Kai Chen, Guohui Wang, Wei Bai, Yangming Zhao, **Hao Wang**, Yanhui Geng, Zhiqiang Ma, Lin Gu. “Towards Comprehensive Traffic Forecasting in Cloud Computing: De-

sign and Application,” in *IEEE/ACM Transactions on Networking (ToN)*, 2015.

◇ **Conference Papers** (in reverse chronological order)

[C1] **Hao Wang**, Di Niu, Baochun Li. “Distributed Machine Learning with a Serverless Architecture,” in the Proceedings of IEEE INFOCOM 2019, Paris, France, April 29 - May 2, 2019. (acceptance ratio: 20%).

[C2] **Hao Wang**, Di Niu, Baochun Li. “Dynamic and Decentralized Global Analytics via Machine Learning,” in the Proceedings of the *ACM Symposium on Cloud Computing 2018 (SoCC 2018)*, Carlsbad, California, October 11-13, 2018 (acceptance ratio: 24%).

[C3] **Hao Wang**, Baochun Li. “Lube: Mitigating Bottlenecks in Wide Area Data Analytics,” in the Proceedings of the *9th USENIX Workshop on Hot Topics in Cloud Computing (HotCloud 2017)*, Santa Clara, California, July 10-11, 2017 (acceptance ratio: 32%).

[C4] Shuhao Liu, **Hao Wang**, Baochun Li. “Optimizing Shuffle in Wide-Area Data Analytics,” in the Proceedings of the 37th International Conference on Distributed Computing Systems (ICDCS 2017), Atlanta, Georgia, June 5–8, 2017 (acceptance ratio: 17%).

[C5] **Hao Wang**, Li Chen, Kai Chen, Ziyang Li, Yiming Zhang, Haibing Guan, Zhengwei Qi, Dongsheng Li, Yanhui Geng. “FlowProphet: Generic and Accurate Traffic Prediction for Data-parallel Cluster Computing,” in the Proceedings of the 35th *International Conference on Distributed Computing Systems (ICDCS 2015)*, Columbus, Ohio, June 29-July 2, 2015 (acceptance ratio: 13%).

[C6] Hong Zhang, Kai Chen, Wei Bai, Dongsu Han, Chen Tian, **Hao Wang**, Haibing Guan, Ming Zhang. “Guaranteeing Deadlines for Inter-Datacenter Transfers,” in the Proceedings of the *ACM European Conference on Computer Systems (EuroSys 2015)*, Bordeaux, France, April 21-24, 2015 (acceptance ratio: 21%).

[C7] Wei Bai, Li Chen, Kai Chen, Dongsu Han, Chen Tian, **Hao Wang**. “Practical Information-Agnostic Flow Scheduling for Data Center Networks,” in the Proceedings of the *12th USENIX Symposium on Networked Systems Design and Implementation (NSDI 2015)*, Oakland, CA, May 4-6, 2015 (acceptance ratio: 20%).

[C8] Shuihai Hu, Kai Chen, Haitao Wu, Wei Bai, Chang Lan, **Hao Wang**, Hongze Zhao, Chuanxiong Guo. “Explicit Path Control in Commodity Data Centers: Design and Applications,” in the Proceedings of the *12th USENIX Symposium on Networked Systems Design and Implementation (NSDI 2015)*, Oakland, CA, May 4-6, 2015 (acceptance ratio: 20%).

[C9] **Hao Wang**, Yangming Zhao, Haibing Guan. “On Pricing Schemes in Data Center Network with Game Theoretic Approach,” in the Proceedings of the *23rd IEEE International Conference on Computer Communications and Networks (ICCCN 2014)*, Shanghai, China, August 4-7, 2014 (acceptance ratio: 28%).

◇ **Conference Posters** (in reverse chronological order)

[P1] **Hao Wang**, Di Niu, Baochun Li. “Dynamic and Decentralized Global Analytics via Machine Learning,” in the Proceedings of the *ACM Symposium on Cloud Computing 2018 (SoCC 2018)*, Carlsbad, California, October 11-13, 2018

[P2] **Hao Wang**, Baochun Li. “Lube: Mitigating Bottlenecks in Wide Area Data Analytics,” in the Proceedings of the *9th USENIX Workshop on Hot Topics in Cloud Computing (HotCloud 2017)*, Santa Clara, California, July 10-11, 2017

SCHOLARLY TALKS	<b>Distributed Machine Learning with a Serverless Architecture</b> <i>IEEE INFOCOM</i> , Paris, France	<b>Apr. 2019</b>
	<b>Optimizing Large Scale Data Analytics via Machine Learning</b> <i>Shanghai Jiao Tong University</i> , Shanghai, China	<b>Jan. 2019</b>
	<b>Dynamic and Decentralized Global Analytics via Machine Learning</b> <i>ACM SoCC</i> , Carlsbad, CA	<b>Oct. 2018</b>
	<b>Mitigating Bottlenecks in Wide Area Data Analytics</b> <i>ACM HotCloud</i> , Santa Clara, CA	<b>Jul. 2017</b>
	<b>Generic and Accurate Traffic Prediction for Data-parallel Cluster Computing</b> <i>IEEE ICDCS</i> , Columbus, OH	<b>Oct. 2015</b>
	<b>On Pricing Schemes in Data Center Network with Game Theoretic Approach</b> <i>IEEE ICCCN</i> , Shanghai, China	<b>Oct. 2014</b>
PROFESSIONAL SERVICES	◇ Web Chair: IEEE ICNP 2017	
	◇ Reviewer for Journal Manuscript Submissions: IEEE Transactions on Networking, IEEE Transactions on Network Science and Engineering, IEEE Transactions on Big Data, Multimedia Systems Springer Journals, IEEE Access	
	◇ Reviewer for Conference Manuscript Submissions: USENIX HotCloud, ACM Multimedia, ACM MMSys, ACM NOSSDAV, IFIP Networking, IEEE INFOCOM, IEEE IWQoS, IEEE GLOBE-COM, ACM SIGCOMM poster, IEEE IC2E, WiOpt, ACM/IEEE IoTDI	
REFERENCES	<b>Baochun Li</b> , IEEE Fellow, Professor Bell Canada Endowed Chair in Computer Engineering Department of Electrical and Computer Engineering University of Toronto, 10 Kings College Rd., Toronto, Ontario M5S 3G4, Canada Phone: +1-416-946-7338; Fax:+1-416-978-4425 Email: bli@ece.toronto.edu Web: <a href="http://iqua.ece.toronto.edu/bli/">http://iqua.ece.toronto.edu/bli/</a>	
	<b>Di Niu</b> , IEEE Member, Associate Professor Department of Electrical and Computer Engineering University of Alberta, 116 St. and 85 Ave., Edmonton, Alberta T6G 2R3, Canada Phone: +1-780-616-1022	

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