

Xingyu Zhou

CONTACT INFORMATION	The Ohio State University 661 Dreese Lab, 2015 Neil Avenue, Columbus, OH 43210 Website: https://xingyuzhou.org/ Email: zhou.2055@osu.edu Phone: (614) 620-9849
RESEARCH INTERESTS	Cloud computing, data centers, optimization, applied probability, stochastic networks, signal processing
EDUCATION	The Ohio State University , Columbus, Ohio, (Presidential Fellow) Ph.D., Electrical and Computer Engineering, 2015 – Present Advisors: Prof. Ness Shroff Tsinghua University , Beijing, China, (with honor) M.S., Electrical Engineering, 2015 Advisor: Prof. Wei Chen BUPT , Beijing, China, (with honor) B.S., Electrical Engineering, 2012 (Ranking: Top 1) Thesis advisor: Prof. Dongming Yuan
HONERS AND AWARDS	Presidential Fellowship , The Ohio State University, 2019 (highest honor at OSU) Student Travel Grant , ACM Sigmetrics, 2018, 2019 Student Travel Grant , IFIP Performance, 2018, 2019 Excellent Dissertation Award , Chinese Institute of Electronics, 2016 Outstanding Graduate Award of Beijing city , 2012 and 2015 Outstanding Graduate Award , BUPT and Tsinghua University, 2012, 2015 Distinguished Dissertation Award , BUPT and Tsinghua University, 2012, 2015 Academic Rising Star Award , Electrical Engineering, Tsinghua University, 2015 “The December 9th” Scholarship , Tsinghua University, 2014 Presidential Award , Finalist of top 10 graduate students, Tsinghua University, 2014 (highest honor at Tsinghua) National Scholarship , Ministry of Education, China, 2011 and 2014 HNA (HaiNan Airlines) Academic Excellence Scholarship , BUPT, 2011 First prize in National Undergraduate Electronic Design Contest , 2011 First prize in National “Freescale Cup” Intelligent Car Competition , 2011
WORKING PAPERS	W1. Xingyu Zhou, Ness Shroff, Adam Wierman, “Heavy traffic analysis of general load balancing with memory” in preparation to be submitted to <i>Mathematics of Operation Research</i>
JOURNAL PUBLICATIONS	J10. Xingyu Zhou , Jian Tan, and Ness Shroff, “Heavy-traffic Delay Optimality in Pull-based Load Balancing Systems: Necessary and Sufficient Conditions,” <i>Proceedings of the ACM on Measurement and Analysis of Computing Systems (POMACS)</i> , vol. 2, Article. 44, Dec. 2018. https://doi.acm.org/10.1145/3287323 J9. Xingyu Zhou , Jian Tan and Ness Shroff, “Flexible load balancing with multi-dimensional state-space collapse: Throughput and heavy-traffic delay optimality,” in <i>Performance Evaluation, Elsevier</i> , 127, pp. 176-193. https://doi.org/10.1016/j.peva.2018.10.003

J8. **Xingyu Zhou***, Fei Wu*, Jian Tan, Kannan Srinivasan, and Ness Shroff, "Degree of queue imbalance: Overcoming the limitation of heavy-traffic delay optimality in load balancing systems," *Proceedings of the ACM on Measurement and Analysis of Computing Systems (POMACS)*, vol. 2, Article. 21, Mar. 2018. <https://doi.acm.org/10.1145/3179424> (*co-primary authors)

J7. **Xingyu Zhou**, Fei Wu, Jian Tan, Yin Sun, and Ness Shroff, "Designing low-complexity heavy-traffic delay-optimal load balancing schemes: Theory to algorithms," *Proceedings of the ACM on Measurement and Analysis of Computing Systems (POMACS)*, vol. 1, Article. 39, Dec. 2017. <https://doi.acm.org/10.1145/3154498>

J6. **Xingyu Zhou**, Bo Bai, Wei Chen, "Antenna selection in energy efficient MIMO systems: A survey," *China Communications*, vol. 12, pp. 162-173, Sep. 2015. <https://doi.org/10.1109/CC.2015.7275254> (**Invited paper**)

J5. **Xingyu Zhou**, Bo Bai, and Wei Chen, "Greedy relay antenna selection for sum rate maximization in amplify-and-forward MIMO two-way relay channels under a holistic power model," *IEEE Communications Letters*, vol. 19, pp. 1648-1651, Jun. 2015. <https://doi.org/10.1109/LCOMM.2015.2449313>

J4. Tong Tian, **Xingyu Zhou**, Bo Bai, and Wei Chen, "How many antennas should be activated in keyhole channels under a holistic power model," *IEEE Communications Letters*, vol. 19, pp. 981-984, Apr. 2015. <https://doi.org/10.1109/LCOMM.2015.2418762>

J3. **Xingyu Zhou**, Bo Bai, and Wei Chen, "Iterative antenna selection for decode-and-forward MIMO relay systems under a holistic power model," *IEEE Communications Letters*, vol. 18, pp. 2237-2240, Dec. 2014. <https://doi.org/10.1109/LCOMM.2014.2366091>

J2. **Xingyu Zhou**, Bo Bai, and Wei Chen, "A low complexity energy efficiency maximization method for multiuser amplify-and-forward MIMO relay systems with a holistic power model," *IEEE Communications Letters*, vol. 18, pp. 1371-1374, Aug. 2014. <https://doi.org/10.1109/LCOMM.2014.2329863>

J1. **Xingyu Zhou**, Bo Bai, and Wei Chen, "Iterative antenna selection for multi-stream MIMO under a holistic power model," *IEEE Wireless Communications Letters*, vol. 3, pp. 82-85, Dec. 2013. <https://doi.org/10.1109/WCL.2013.111713.130754>

CONFERENCE
PUBLICATIONS

C8. **Xingyu Zhou**, Jian Tan, and Ness Shroff, "Heavy-traffic Delay Optimality in Pull-based Load Balancing Systems: Necessary and Sufficient Conditions," to appear in *Proc. ACM SIGMETRICS/IFIP PERFORMANCE*, Phoenix, Arizona, June. 2019

C7. **Xingyu Zhou**, Jian Tan and Ness Shroff, "Flexible load balancing with multi-dimensional state-space collapse: Throughput and heavy-traffic delay optimality," in *Proc. International Symposium on Computer Performance, Modeling, Measurements and Evaluation (IFIP Performance)*, Toulouse, France, Dec. 2018.

C6. **Xingyu Zhou***, Fei Wu*, Jian Tan, Kannan Srinivasan, and Ness Shroff, "Degree of queue imbalance: Overcoming the limitation of heavy-traffic delay optimality in load balancing systems," in *Proc. ACM SIGMETRICS*, Irvine, California, USA, Jun. 2018. <https://doi.acm.org/10.1145/3219617.3219665> (*co-primary authors)

C5. **Xingyu Zhou**, Fei Wu, Jian Tan, Yin Sun, and Ness Shroff, "Designing low-complexity heavy-traffic delay-optimal load balancing schemes: Theory to algorithms," in *Proc. ACM SIGMETRICS*, Irvine, California, USA, Jun. 2018. <https://doi.acm.org/10.1145/3219617.3219670>

C4. **Xingyu Zhou**, Bo Bai, and Wei Chen, "Energy efficient relay antenna selection for AF MIMO two-way relay channels," in *Proc. IEEE International Conference on Communications (ICC)*, London, UK, Jun. 2015. <https://doi.org/10.1109/ICC.2015.7249063>

C3. **Xingyu Zhou**, Bo Bai, Wei Chen and Yuxing Han, "On energy efficiency maximization of AF MIMO relay systems with antenna selection," in *Proc. IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, Atlanta, Georgia, USA, Dec. 2014. <https://doi.org/10.1109/GlobalSIP.2014.7032084> (**Invited paper**)

C2. **Xingyu Zhou**, Bo Bai, Wei Chen and Yuxing Han, "Energy efficient transmission for DF MIMO relay systems with antenna selection," in *Proc. IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, Atlanta, Georgia, USA, Dec. 2014. <https://doi.org/10.1109/GlobalSIP.2014.7032097>

C1. **Xingyu Zhou**, Bo Bai, Wei Chen and Yuxing Han, "An iterative algorithm for joint antenna selection and power adaptation in energy efficient MIMO," in *Proc. IEEE International Conference on Communications (ICC)*, Sydney, Australia, Jun. 2014 <https://doi.org/10.1109/ICC.2014.6883915>

INVITED TALKS AND PRESENTATIONS

"Heavy-traffic Delay Optimality in Pull-based Load Balancing Systems: Necessary and Sufficient Conditions" invited talk at INFORMS Annual Meeting, Seattle, Oct. 2019

"Heavy-traffic Delay Optimality in Pull-based Load Balancing Systems: Necessary and Sufficient Conditions" invited talk at RSRG Seminar, Caltech, Feb. 2019

"Load balancing in heavy traffic: Theory and algorithms," invited talk at SQUALL seminar, CMU, Sep. 2018

"Delay-Optimality in Load Balancing Systems," keynote at ITC'19 based on my works (given by Prof. Shroff).

"Flexible Load Balancing with Multi-dimensional State-space Collapse: Throughput and Heavy-traffic Delay Optimality," IFIP Performance'18, Toulouse, France, Dec. 2018

"Degree of queue imbalance: Overcoming the limitation of heavy-traffic delay optimality in load balancing systems," ACM Sigmetrics'18, Irvine, Jun. 2018

"Designing low-complexity heavy-traffic delay-optimal load balancing schemes: Theory to algorithms," ACM Sigmetrics'18, Irvine, CA, Jun. 2018

"Load balancing in heavy-traffic regime: Theory and algorithms," invited presentation at 3rd IMACCS workshop, Columbus, OH, Jun. 2018

"Load balancing algorithms in cloud networks," PhD Qualify Exam Presentation, 2015

"Energy efficient relay antenna selection for AF MIMO two-way relay channels," IEEE ICC'15, London, UK, Jun. 2015

"An iterative algorithm for joint antenna selection and power adaptation in energy efficient MIMO," IEEE ICC'14, Sydney, Australia, Jun. 2014

- “On energy efficiency maximization of AF MIMO relay systems with antenna selection,” IEEE GlobalSIP’14, Atlanta, Georgia, USA, Dec. 2014.
- TEACHING EXPERIENCE**
T.A., Introduction to Wireless Networking, The Ohio State University, Spring 2018, 2019
T.A., Data Structures and Algorithms, Tsinghua University, Fall 2014
T.A., Communications and Networks, Tsinghua University, Fall 2013
- INDUSTRY EXPERIENCE**
Facebook Inc, Recruiting Product Team
 Machine Learning Engineer Intern, May. 2019 - Aug. 2019
 Project: Developing various machine learning models to improve the recruiting products
- MENTORING EXPERIENCE**
SRT (Student Research Training) Mentor, Tsinghua University
 Tong Tian (now PhD student at CMU): co-authored an IEEE Journal.
 Yue Liu (now at NetEase)
- LEADERSHIP AND ACTIVITIES**
Social Practice Activity, Tsinghua University, Winter and Summer, 2013
 Gold medal prizes for both activities
 Team leader and Presenter
- TECHNICAL SKILLS**
Mathematica: Probability, Stochastic Analysis, Optimization, Machine Learning
Statistics: Hypothesis testing, ANOVA, Regression, A/B Test
Programming: Python, C, Java, R, Matlab, MySQL, HTML, \LaTeX
Platform: Hadoop, MapReduce, Pig, Spark, YARN.
- PROFESSIONAL SERVICE**
Reviewer for the following journals: IEEE/ACM Transactions on Networking, IEEE Transactions on Communications, IEEE Journal on Selected Areas in Communications, IEEE Communications Surveys and Tutorials, IEEE Transactions on Network Science and Engineering, Performance Evaluation, IEEE Access
Reviewer for the following conferences: ACM Sigmetrics, ACM MobiHoc, IEEE INFOCOM, IEEE ICC, IEEE Globecom, IEEE GlobalSIP, IEEE WiOpt.
- REFERENCES (ALPHABETICALLY)**
 Prof. Atilla Eryilmaz
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- Prof. R. Srikant
 Fredric G. and Elizabeth H. Endowed Professor
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