

# Xingyu Zhou

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CONTACT INFORMATION	<p>The Ohio State University 661 Dreese Lab, 2015 Neil Avenue, Columbus, OH 43210 <b>Website:</b> <a href="https://xingyuzhou.org/">https://xingyuzhou.org/</a> <b>Email:</b> zhou.2055@osu.edu      <b>Phone:</b> (614) 620-9849</p>
RESEARCH INTERESTS	<p>Cloud computing, data centers, optimization, applied probability, stochastic networks, signal processing</p>
EDUCATION	<p><b>The Ohio State University</b>, Columbus, Ohio Ph.D., Electrical and Computer Engineering, 2015 – Present Advisors: Prof. Ness Shroff</p> <p><b>Tsinghua University</b>, Beijing, China M.S., Electrical Engineering, 2015 Advisor: Prof. Wei Chen</p> <p><b>BUPT</b>, Beijing, China B.S., Electrical Engineering, 2012 (Ranking: Top 1) Thesis advisor: Prof. Dongming Yuan</p>
HONORS AND AWARDS	<p><b>Student Travel Grant</b>, ACM Sigmetrics, 2018 <b>Student Travel Grant</b>, IFIP Performance, 2018 <b>Excellent Dissertation Award</b>, Chinese Institute of Electronics, 2016 <b>Outstanding Graduate Award of Beijing city</b>, 2012 and 2015 <b>Outstanding Graduate Award</b>, BUPT and Tsinghua University, 2012, 2015 <b>Distinguished Dissertation Award</b>, BUPT and Tsinghua University, 2012, 2015 <b>Academic Rising Star Award</b>, Electrical Engineering, Tsinghua University, 2015 <b>“The December 9th” Scholarship</b>, Tsinghua University, 2014 <b>National Scholarship</b>, Ministry of Education, China, 2011 and 2014 <b>HNA (HaiNan Airlines) Academic Excellence Scholarship</b>, BUPT, 2011 <b>First prize in National Undergraduate Electronic Design Contest</b>, 2011 <b>First prize in National “Freescall Cup” Intelligent Car Competition</b>, 2011</p>
JOURNAL PUBLICATIONS	<p>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. <a href="https://doi.acm.org/10.1145/3287323">https://doi.acm.org/10.1145/3287323</a></p> <p>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. <a href="https://doi.org/10.1016/j.peva.2018.10.003">https://doi.org/10.1016/j.peva.2018.10.003</a></p> <p>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,” <i>Proceedings of the ACM on Measurement and Analysis of Computing Systems (POMACS)</i>, vol. 2, Article. 21, Mar. 2018. <a href="https://doi.acm.org/10.1145/3179424">https://doi.acm.org/10.1145/3179424</a> (*co-primary authors)</p>

CONFERENCE  
PUBLICATIONS

- 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>
- 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>

#### TALKS AND PRESENTATIONS

"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

"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," 3rd IMACCS workshop, Columbus, OH, Jun. 2018

"The power of transfer learning in artist identification," Machine Learning, course presentation, 2018

"Fenchel duality between strong convexity and Lipschitz continuous gradient," Advanced Topics in Networking, course presentation, 2017

"Load balancing in distributed system: a survey," Special Topics in Stochastic Process, course presentation, 2016

"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

T.A., Data Structures and Algorithms, Tsinghua University, Fall 2014

T.A., Communications and Networks, Tsinghua University, Fall 2013

SELECTED COURSES	Algorithms, Machine Learning, Artificial Intelligence (Audit), Computer Networks, Real Analysis, Probability Theory, Stochastic Process, Convex Optimization, Game Theory.
TECHNICAL SKILLS	<b>Mathematica:</b> Probability, Stochastic Analysis, Optimization, Machine Learning <b>Statistics:</b> Hypothesis testing, ANOVA, Regression, A/B Test <b>Programming:</b> Python, C, Java, R, Matlab, MySQL, HTML, $\text{\LaTeX}$ <b>Platform:</b> Hadoop, MapReduce, Pig, Spark, YARN.
PROFESSIONAL SERVICE	Reviewer for IEEE Journal on Selected Areas in Communications, IEEE Communications Surveys and Tutorials, IEEE Transactions on Network Science and Engineering, Performance Evaluation, IEEE Access, Sigmetrics, MobiHoc, INFOCOM, ICC, Globecom, GlobalSIP, WiOpt.