

## Zhi Wang

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<b>Affiliation</b>	<b>Associate Professor</b> , Tsinghua Shenzhen International Graduate School, Tsinghua University.  <b>Director</b> , TSIGS – Shine Works InfleXion Lab (Joint Innovation Lab)
<b>Education Background</b>	<b>Ph.D.</b> , Computer Science and Technology, Tsinghua University, 2008.9–2014.1 <b>B.E.</b> , Computer Science and Technology, Tsinghua University, 2004.9–2008.7
<b>Research</b>	His research areas include multimedia network, cloud and edge computing for multimedia and large-scale machine learning systems, where he uses data-driven methods to shed insights on multimedia system performance, user behaviors and optimization space.
<b>Achievement Summary</b>	Zhi Wang is currently an associate professor in Shenzhen International Graduate School, Tsinghua University. His publications have been recognized by three best paper awards/finalist, including <b>ACM Multimedia Best Paper Award</b> in 2012. He received the <b>Outstanding Doctoral Dissertation Award from China Computer Federation</b> in 2014, and the <b>Second Prize of National Natural Science Award</b> in 2018. He has been serving as an Associate Editor for IEEE Transactions on Multimedia, and served a Guest Editor for ACM TIST and JCST. His research has been covered by prestigious medias including MIT Technology Review.
<b>Best Paper Awards</b>	<b>Outstanding Doctoral Dissertation Award</b> , China Computer Federation ( <b>Rank 3 among 10 winners, out of 37 nominees in China</b> ) 2014 <b>Best Paper Award</b> , ACM Multimedia 2012 ( <b>only 1 paper receives this award among 4 candidates</b> ) 2012 <b>Best Student Paper Award</b> , MMM 2015 2015 <b>Best Paper Finalist</b> , IEEE/ACM IWQoS 2016 2016
<b>Selected Honors</b>	<b>Chinese Institute of Electronics Award (First Prize)</b> , 2020 <b>Shenzhen Youth Science and Technology Award</b> , 2019 <b>National Natural Science Award (Second Class)</b> , 2018 <b>Natural Science Award of Ministry of Education (First Prize)</b> , 2017 <b>Outstanding Graduate Award of Beijing</b> , Tsinghua University ( <b>only 36 winners</b> ) 2014

**National Scholarship**, Tsinghua University (**only 4 graduate winners, top 2%**) 2012

## Research Experience

**Associate professor**, Tsinghua University, 2018.12—present  
• Tsinghua Shenzhen International Graduate School

**Assistant professor**, Tsinghua University, 2014.2—2018.12  
• Tsinghua Shenzhen International Graduate School

**PhD student**, Tsinghua University, 2008.9—2014.1  
• Advisor: Prof. Shiqiang Yang  
• Lab of Multimedia and Networking

**Research assistant**, University of Toronto, 2012.2—2012.8  
• Advisor: Prof. Baochun Li  
• iQua Group

**Research assistant**, The University of Hong Kong, 2010.1—2010.7  
• Advisor: Prof. Chuan Wu  
• Networking Research Group

## Publications

### Books and chapters

1. **Zhi Wang**, Wenwu Zhu and Shiqiang Yang. “Online Social Media Content Delivery: A Data-driven Approach,” In SpringerBriefs in Computer Science, Springer, ISBN 978-981-10-2773-4, 2018.
2. **Zhi Wang**, Jiangchuan Liu, Wenwu Zhu. “Social Video Content Delivery,” SpringerBriefs in Electrical and Computer Engineering, 2016.
3. **Zhi Wang**, Wenwu Zhu, Peng Cui, Lifeng Sun, Shiqiang Yang. “Social Media Recommendation,” Book Chapter in **Social Media Retrieval**, Naeem Ramzan, Roelof van Zwol, Jong-Seok Lee, Kai Cluver, and Xian-Sheng Hua, Editors, pp. 23–43, Springer-Verlag, ISBN 978-1-4471-4554-7, 2013.

### Editorials

1. Wenwu Zhu, Jean Walrand, Yike Guo, **Zhi Wang**, “Data-driven Intelligence for Wireless Networking,” ACM TIST Special Issue on Data-driven Intelligence for Wireless Networking, vol. 7, September 2017.
2. Wenwu Zhu, Yonggang Wen, **Zhi Wang**, “Special Section on Networking and Distributed Computing for Big Data,” Special Section on Networking and Distributed Computing for Big Data, Journal of Computer Science and Technology (JCST), vol. 6, November 2015.

### Magazine articles

1. Lifeng Sun, Ming Ma, Wen Hu, Haitian Pang and **Zhi Wang**. “Beyond 1 Million Nodes—Crowdsourced Video CDN: Architecture, Technology, and Economy,” IEEE MultiMedia.

2. Lei Zhang, Liting Zhao, **Zhi Wang**, Jiangchuan Liu, “WiFi Networks in Metropolises: From Access Point and User Perspectives,” *IEEE Communications Magazine*, vol. 55, no. 5, pp. 42–48, May 2017.
3. **Zhi Wang**, Jiangchuan Liu, Wenwu Zhu, “Social Video Delivery: Challenges, Approaches and Directions,” *IEEE Network Magazine*, vol. 30, no. 5, pp. 35–39, September 2016.
4. Wenwu Zhu, Peng Cui, **Zhi Wang**, Gang Hua. “Multimedia Big Data Computing,” *IEEE MultiMedia*, vol. 22, no. 3, pp. 96–c3, July 2015.

## Journal articles

1. Yanlong Dong, Ying Zhang, Lin Ma, **Zhi Wang** and Jiebo Luo. ”Unsupervised Text-to-image Synthesis,” In *Pattern Recognition*, accepted, August 2020
2. Wenwu Zhu and **Zhi Wang**. “Data-driven Multiemdia Edge Network and Content Delivery,” In *Science China Information Sciences*, vol. 51, no. 3, pp. 468–504, 2021
3. Laizhong Cui, Dongyuan Su, Shu Yang, **Zhi Wang** and Zhong Ming. “TCLiVi: Transmission Control in Live Video Streaming Based on Deep Reinforcement Learning,” In *IEEE Transactions on Multimedia (TMM)*, accepted (**JCR-Q1**)
4. Jingyan Jiang, Liang Hu, Chenghao Hu, Jiatae Liu and Zhi Wang. “BA-Combo: Bandwidth-Aware Decentralized Federated Learning,” In *MDPI Electronics*, vol. 9, no. 3, pp. 440:1-15, March 2020.
5. Cheng Zhan, Han Hu, **Zhi Wang**, Rongfei Fan and Dusit Niyato. “Unmanned Aircraft System Aided Adaptive Video Streaming: A Joint Optimization Approach,” In *IEEE Transactions on Multimedia (TMM)*, vol. 22, no. 3, pp. 795-807, March 2020. (**JCR-Q1**)
6. Haitian Pang, **Zhi Wang**, Chen Yan, Qinghua Ding, Kun Yi, Jiangchuan Liu, Lifeng Sun. “Content Harvest Network: Optimizing First Mile for Crowdsourced Live Streaming,” In *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)*, vol. 29, no. 7, pp. 2112-2125, July 2019. (**JCR-Q1**)
7. Ming Ma, Lei Zhang, Jiangchuan Liu, **Zhi Wang**, Haitian Pang, Lifeng Sun, Weihua Li, Guangling Hou and Chu Xu. “Characterizing User Behaviors in Mobile Livecast: Towards an Edge Computing-assisted Paradigm,” In *ACM Transactions on Multimedia Computing Communications and Applications (TOMCCAP)*, vol. 14, no. 3s, pp. 66:1–66:24, August 2018.
8. Wen Hu, Yichao Jin, Yonggang Wen, **Zhi Wang** and Lifeng Sun. “Towards Wi-Fi AP-Assisted Content Prefetching for On-Demand TV Series: A Learning-based Approach,” *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)*, vol. 28, no. 7, pp. 1665–1676, July 2018. (**JCR-Q1**)
9. Shan Huang, **Zhi Wang**, Yong Jiang. “Guess Your Size: a Hybrid Model for Footwear Size Recommendation,” In *Advanced Engineering Informatics*, vol. 36, pp. 64-75, April 2018. (**JCR-Q1**)
10. Mohammad H. Hajiesmaili, Lok To Mak, **Zhi Wang**, Chuan Wu, Minghua Chen. “Cost-Effective Low-Delay Cloud Video Conferencing,” In *IEEE Transactions on Multimedia (TMM)*, vol. 19, no. 12, pp. 2760–2774, December 2017. (**JCR-Q1**)

11. Cong Zhang, Qiyun He, Jiangchuan Liu and **Zhi Wang**. “Exploring Viewer Gazing Patterns for Touch-Based Mobile Gamecasting,” In IEEE Transactions on Multimedia (**TMM**), vol. 19, no. 10, pp. 2333–2344, October 2017. (**JCR-Q1**)
12. Ge Ma, **Zhi Wang**, Miao Zhang, Jiahui Ye, Minghua Chen and Wenwu Zhu. “Understanding Performance of Edge Content Caching for Mobile Video Streaming,” In IEEE Journal on Selected Areas in Communications (**JSAC**), vol. 35, no. 5, pp. 1076–1089, May 2017. (**CCF-A, JCR-Q1**)
13. **Zhi Wang**, Lifeng Sun, Miao Zhang, Haitian Pang, Erfang Tian, Wenwu Zhu, “Propagation- and Mobility-Aware D2D Social Content Replication,” IEEE Transactions on Mobile Computing (**TMC**), vol. 16, no. 4, pp. 1107–1120, April 2017. (**CCF-A, JCR-Q1**)
14. Lifeng Sun, Xiaoyan Wang, **Zhi Wang**, Vicky Zhao, Wenwu Zhu, “Social-Aware Video Recommendation for Online Social Groups,” IEEE Transactions on Multimedia (**TMM**), vol. 19, no. 3, pp. 609–618, March 2017. (**JCR-Q1**)
15. Xiaoyi Fan, Jiangchuan Liu, **Zhi Wang**, Yong Jiang, Xue Liu, “CrowdNavi: Demystifying Last Mile Navigation with Crowdsourced Driving Information,” IEEE Transactions on Industrial Informatics (**II**), vol. 13, no. 2, pp. 771–781, October 2016. (**JCR-Q1**)
16. Wen Hu, **Zhi Wang**, Ming Ma, Lifeng Sun, “Edge Video CDN: A Wi-Fi Content Hotspot Solution,” Journal of Computer and Technology, vol. 31, no. 6, pp. 1072–1086, November 2016.
17. **Zhi Wang**, Baochun Li, Lifeng Sun, Wenwu Zhu, Shiqiang Yang. “Dispersing Instant Social Video Service Across Multiple Clouds,” IEEE Transactions on Parallel and Distributed Systems (**TPDS**), vol. 27, no. 3, pp. 735–747, March 2016. (**CCF-A, JCR-Q1**)
18. Guanyu Gao, Weiwen Zhang, Yonggang Wen, **Zhi Wang**, Wenwu Zhu. “Towards Cost-Efficient Video Transcoding in Media Cloud: Insights Learned From User Viewing Patterns,” IEEE Transactions on Multimedia (**TMM**), vol. 17, no. 8, pp. 1286 - 1296, August 2015. (**JCR-Q1**)
19. **Zhi Wang**, Lifeng Sun, Chuan Wu, Wenwu Zhu, Alan Zhuang, Shiqiang Yang. “A Joint Online Transcoding and Delivery Approach for Dynamic Adaptive Streaming,” IEEE Transactions on Multimedia (**TMM**), vol. 17, no. 6, pp. 867–879, April 2015. (**JCR-Q1**)
20. **Zhi Wang**, Wenwu Zhu, Minghua Chen, Lifeng Sun, Shiqiang Yang. “CPCDN: Content Delivery Powered by Context and User Intelligence,” IEEE Transactions on Multimedia (**TMM**), vol. 17, no. 1, pp. 92–103, January 2015. (**JCR-Q1**)
21. **Zhi Wang**, Lifeng Sun, Chuan Wu, Shiqiang Yang. “Enhancing Internet-scale Video Service Deployment Using Microblog-based Prediction,” In IEEE Transactions on Parallel and Distributed Systems (**TPDS**), vol. 26, no. 3, pp. 775–785, March 2015. (**CCF-A, JCR-Q1**)
22. Baochun Li, **Zhi Wang**, Jiangchuan Liu, Wenwu Zhu. “Two Decades of Internet Video Streaming: A Retrospective View,” in ACM Transactions on Multimedia Computing Communications and Applications, Special Issue on the 20th Anniversary of ACM SIGMM Multimedia, vol. 9, no. 1s, pp. 33–52, October 2013.
23. **Zhi Wang**, Wenwu Zhu, Xiangwen Chen, Lifeng Sun, Jiangchuan Liu, Minghua Chen, Peng Cui, Shiqiang Yang. “Propagation-Based Social-Aware Multimedia Content Distribution,” to appear in ACM Transactions on Multimedia

- Computing Communications and Applications (**TOMCCAP**), vol. 9, no. 1s, pp. 53–72, October 2013.
24. **Zhi Wang**, Lifeng Sun, Wenwu Zhu, Shiqiang Yang, Hongzhi Li, Dapeng Oliver Wu. “Joint Social and Content Recommendation for User Generated Videos in Online Social Network,” *IEEE Transactions on Multimedia (TMM)*, vol. 15, issue 3, pp. 698–709, April 2013. (**JCR-Q1**)
  25. **Zhi Wang**, Chuan Wu, Lifeng Sun, Shiqiang Yang. “Peer-Assisted Social Media Streaming With Social Reciprocity,” *IEEE Transactions on Network and Service Management*, vol. 10, issue 1, pp. 84–94, March 2013. (**invited submission**)
  26. Wenwu Zhu, Peng Cui, **Zhi Wang**. “Social Media Cloud Computing,” *Communications of the CCF*, vol. 8, no. 4, pp. 36–40, April 2012. (**invited submission**)
  27. **Zhi Wang**, Chuan Wu, Lifeng Sun, Shiqiang Yang. “Strategies of Collaboration in Multi-Swarm Peer-to-Peer Content Distribution.” *Elsevier Journal of Tsinghua Science and Technology*, vol. 17, no. 1, pp. 29–39, February 2012. (**invited submission**)

## Conference papers

1. Chenglei Wu, **Zhi Wang** and Lifeng Sun. “A Spherical Mixture Model Approach for 360 Video Virtual Cinematography,” In Proceedings of IEEE International Conference on Image Processing (ICIP), Anchorage, Alaska, USA, 19-22 September 2021.
2. Cheng Chen, Yichun Yin, Lifeng Shang, **Zhi Wang**, Xin Jiang, Xiao Chen and Qun Liu. “Extract then Distill: Efficient and Effective Task-Agnostic BERT Distillation,” In Proceedings of The International Conference on Artificial Neural Networks, Fully Online, 14-17 September 2021.
3. Wenjie Zhang and **Zhi Wang**. “Blurred Image Recognition: A Joint Motion Deblurring and Classification Loss-Aware Approach,” In Proceedings of The International Conference on Artificial Neural Networks, Fully Online, 14-17 September 2021.
4. Jian Zhao, Xin Wu, Yan Zhang, Yu Wu and **Zhi Wang**. “A Blockchain Based Decentralized Gradient Aggregation Design for Federated Learning,” In Proceedings of The International Conference on Artificial Neural Networks, Fully Online, 14-17 September 2021.
5. Chenglei Wu, **Zhi Wang** and Lifeng Sun. “PAAS: A Preference-Aware Deep Reinforcement Learning Approach for 360 Video Streaming,” In Proceedings of ACM NOSSDAV, Istanbul, Turkey, September 2021.
6. Miao Zhang, Fangxin Wang, Yifei Zhu, Jiangchuan Liu and **Zhi Wang**. “Towards Cloud-Edge Collaborative Online Video Analytics with Fine-Grained Serverless Pipelines,” In Proceedings of ACM MMSys, Istanbul, Turkey, September 2021.
7. Kun Yi, **Zhi Wang** and Lifeng Sun. “A Dataset for Exploring Gaze Behaviors in Text Summarization,” In Proceedings of ACM NOSSDAV, Istanbul, Turkey, September 2021.
8. Jiahui Ye, Zichun Li, **Zhi Wang**, Zhuobin Zheng, Han Hu and Wenwu Zhu. “Joint Cache Size Scaling and Replacement Adaptation for Small Content

- Providers,” In Proceedings of IEEE **INFOCOM** 2021, Virtual Conference, China, May 10–13, 2021 (CCF-A)
9. Kun Yi, Yu Guo, **Zhi Wang**, Lifeng Sun and Wenwu Zhu. “Personalized Text Summarization Based on Gaze Patterns,” In Proceedings of IEEE International Conference on Multimedia Information Processing and Retrieval (MIPR), Shenzhen, Guangdong, China August 6-8, 2020
  10. Peng Zhang, Yuwei Zhang, Shan Huang and Zhi Wang. “Fine-grained Garment Parsing: a Body Generation Approach,” In Proceedings of IEEE International Conference on Multimedia and Expo (ICME) 2020, London, UK, July 6-10, 2020
  11. Yuwei Zhang, Peng Zhang, Chun Yuan, and **Zhi Wang**. “Texture and Shape biased Two-Stream Networks for Clothing Classification and Attribute Recognition,” In Proceedings of **IEEE CVPR**, Virtual, June 14-19, 2020 (CCF-A)
  12. Cong Zhang, Jiangchuan Liu, **Zhi Wang** and Lifeng Sun. “Look Ahead at the First-mile in Livecast with Crowdsourced Highlight Prediction,” In Proceedings of **IEEE INFOCOM**, Beijing, China, April 27-30, 2020 (CCF-A)
  13. Chenglei Wu, Ruixiao Zhang, **Zhi Wang** and Lifeng Sun. “A Spherical Convolution Approach for Learning Long Term Viewport Prediction in 360 Immersive Video,” In Proceedings of **AAAI**, New York, NY, USA, February 7-12, 2020 (CCF-A)
  14. Hongshan Li, Yu Guo, **Zhi Wang**, Shutao Xia and Wenwu Zhu. “AdaCompress: Adaptive Compression for Online Computer Vision Services,” In Proceedings of **ACM Multimedia**, Nice, France. October 21–25, 2019 (CCF-A)
  15. Shan Huang, **Zhi Wang**, Laizhong Cui, Yong Jiang and Rui Gao. “Fine-grained Fitting Experience Prediction: A 3D-slicing Attention Approach,” In Proceedings of **ACM Multimedia**, Nice, France, October 21–25, 2019 (CCF-A)
  16. Chenghao Hu, Jingyan Jiang, **Zhi Wang**. “Decentralized Federated Learning: A Segmented Gossip Approach” In Proceedings of **IJCAI** Workshop on Federated Machine Learning, Macau, China, August 10–16, 2019 (CCF-A)
  17. Zhengyuan Pang, Lifeng Sun, Tianchi Huang, **Zhi Wang** and Shiqiang Yang. “Towards QoS-Aware Cloud Live Transcoding: A Deep Reinforcement Learning Approach,” In Proceedings of IEEE ICME 2019, Shanghai, China, July 8–12, 2019
  18. Yuan Meng, Shenglin Zhang, Zijie Ye, Benliang Wang, **Zhi Wang**, Yongqian Sun, Qitong Liu, Shuai Yang and Dan Pei. “Causal Analysis of the Unsatisfying Experience in Realtime Mobile Multiplayer Games in the Wild,” In Proceedings of IEEE ICME 2019, Shanghai, China, July 8–12, 2019
  19. Zihan Wang, Yuan Zhuang, **Zhi Wang** and Xin Wu. “Individual Data Plan in Virtual Network Operation: A Proactive Matching Approach,” In Proceedings of **IEEE INFOCOM**, Paris, France, April 29–May 2, 2019 (CCF-A)
  20. Hongshan Li, Chenghao Hu, Jingyan Jiang, **Zhi Wang**, Yonggang Wen and Wenwu Zhu. “JALAD: Joint Accuracy- and Latency-Aware Deep Structure Decoupling for Edge-Cloud Execution” In Proceedings of The 24th International Conference on Parallel and Distributed Systems (IEEE ICPADS), Sentosa, Singapore, December 11, 2018
  21. Ge Ma, **Zhi Wang** and Wenwu Zhu. “Wireless Caching in Large-scale Access Points: A Local Distributed Approach,” In Proceedings of **ACM Mobicom**, October 29–November 2, 2018, New Delhi, India. (CCF-A)

22. Haitian Pang, Cong Zhang, Fangxin Wang, Han Hu, **Zhi Wang**, Jiangchuan Liu and Lifeng Sun. "Optimizing Personalized Interaction Experience in Crowd-Interactive Livecast: A Cloud-Edge Approach," In Proceedings of **ACM Multimedia**, October 22–26, 2018, Seoul, Korea. (CCF-A)
23. Jiahui Ye, **Zhi Wang**, and Wenwu Zhu. "From Global to Local: A Context-Embedded LSTM Recurrent Network for Local Content Popularity Prediction." International Conference on Artificial Intelligence: Methodology, Systems, and Applications. Springer, Cham, 2018.
24. Shan Huang, Yanlong Dong, **Zhi Wang**, Yong Jiang, Xu Zhang, Rui Gao. "Data-Driven Shoe Last Generation Based On Preference-Aware GAN," In Proceedings of IEEE International Conference on Multimedia and Expo (ICME) 2018, San Diego, USA July 25, 2018
25. Chou Mo, Guowei Zhu, **Zhi Wang** and Wenwu Zhu. "Understanding Gaming Experience in Mobile Multiplayer Online Battle Arena Games," In Proceedings of ACM SIGMM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV) 2018, Amsterdam, The Netherlands June 15, 2018
26. Miao Zhang, Shan Huang, **Zhi Wang** and Yong Jiang. "Delay-Aware Upload Balancing Cross APs based on User Relays," In Proceedings of IEEE International Conference on Communications (ICC), Kansas City, MO, USA, May 20-24, 2018
27. Xiuping Han, **Zhi Wang** and Dan Pei. "Preventing Wi-Fi Privacy Leakage: A User Behavioral Similarity Approach," In Proceedings of IEEE International Conference on Communications (ICC), Kansas City, MO, USA, May 20-24, 2018
28. Wei Gong, Si Chen, Jiangchuan Liu and **Zhi Wang**. "MobiRate: Mobility-Aware Rate Adaptation Using PHY Information for Backscatter Networks," In Proceedings of **IEEE INFOCOM**, Honolulu, HI, USA, April 15-19, 2018 (CCF-A)
29. Yifei Zhu, Jiangchuan Liu, **Zhi Wang** and Cong Zhang. "When Cloud Meets Uncertain Crowd: An Auction Approach for Crowdsourced Livecast Transcoding," In Proceedings of **ACM Multimedia**, Mountain View, CA USA, October 23-27, 2017 (CCF-A)
30. Ge Ma, **Zhi Wang**, Minghua Chen and Wenwu Zhu. "APRank: Joint Mobility and Preference-based Mobile Video Prefetching," In Proceedings of IEEE ICME 2017, Hong Kong, July 10-14, 2017.
31. Zhengyuan Pang, Lifeng Sun, **Zhi Wang** and Shiqiang Yang. "CP-Operated DASH Caching Via Reinforcement Learning," In Proceedings of IEEE ICME 2017, Hong Kong, July 10-14, 2017.
32. Ming Ma, Lei Zhang, Jiangchuan Liu, **Zhi Wang**, Lifeng Sun. "Characterizing User Behaviors in Mobile Personal Livecast," In Proceedings of ACM SIGMM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV) 2017, Taipei, Taiwan, June 20-23, 2017.
33. Chenglei Wu, Zhihao Tan, **Zhi Wang**, Shiqiang Yang. "A Dataset for Exploring User Behaviors in VR Spherical Video Streaming," In Proceedings of ACM Multimedia Systems (MMSys) 2017, Taipei, Taiwan, June 20-23, 2017.
34. Wen Hu, Jiahui Huang, **Zhi Wang**, Peng Wang, Kun Yi, Yonggang Wen, Lifeng Sun. "MUSA: Wi-Fi AP-Assisted Video Prefetching via Tensor Learning," in Proceedings of IEEE/ACM International Symposium on Quality of Service (IWQoS), Vilanova I La Geltrú, Spain, June 14-16, 2017.

35. Changhua Pei, **Zhi Wang**, Youjian Zhao, Zihan Wang, Yuan Meng, Dan Pei, Yuanquan Peng, Wenliang Tang, Xiaodong Qu. "Why it Takes so Long to Connect to a WiFi Access Point?" in Proceedings of **IEEE INFOCOM**, Atlanta, GA, USA, May 1-4, 2017. (CCF-A)
36. Cong Zhang, Qiyun He, Jiangchuan Liu, **Zhi Wang**. "Beyond the Touch: Interaction-Aware Mobile Live Game Streaming with Gazing Pattern Prediction," in Proceedings of **IEEE INFOCOM**, Atlanta, GA, USA, May 1-4, 2017. (CCF-A)
37. Ming Ma, **Zhi Wang**, Kun Yi, Jiangchuan Liu and Lifeng Sun. "Joint Request Balancing and Content Aggregation in Crowdsourced CDN," In Proceedings of IEEE ICDCS, Atlanta, GA, USA, June 5-8, 2017.
38. Chenglin Zeng, Laizhong Cui and **Zhi Wang**. "An Exponential Time-Aware Recommendation Model for Mobile Notification Services," In Proceedings of PAKDD 2017, Jeju, South Korea, May 23-26, 2017.
39. Zhengyuan Pang, Lifeng Sun, **Zhi Wang**, Yuan Xie, Shiqiang Yang. "Understanding Performance of Edge Prefetching," in Proceedings of International Conference on MultiMedia Modeling (MMM), Reykjavík, Iceland, January 4-6 2017
40. Zhixiong Niu, **Zhi Wang**, Hong Xu, Chuan Wu, Francis Lau. "More is Better? Measurement of MPTCP based Cellular Bandwidth Aggregation in the Wild," in IEEE International Conference on Mobile Ad hoc and Sensor Systems (MASS) 2016, Brasilia, Brazil, October 10-13, 2016
41. Ming Ma, **Zhi Wang**, Ke Su, Lifeng Sun. "Understanding the Power of Smartrouter-based Peer CDN for Video Streaming," in IEEE International Conference on Computer Communication and Networks (ICCCN) 2016, Waikoloa, Hawaii, USA, August 1-4, 2016
42. Yixin Bao, Xiaoke Wang, **Zhi Wang**, Chuan Wu, Francis C.M. Lau. "Online Influence Maximization in Non-Stationary Social Networks," in Proceedings of IEEE/ACM International Symposium on Quality of Service (IWQoS), Beijing, China, June 20-21, 2016
43. Menghan Li, Dan Pei, Xiaoping Zhang, Beichuan Zhang, **Zhi Wang**, Hailiang Xu, Zihan Wang. "M<sup>3</sup>: Practical and Reliable Multi-Layer Video Multicast over Multi-rate Wi-Fi Network," in Proceedings of IEEE/ACM International Symposium on Quality of Service (IWQoS), Beijing, China, June 20-21, 2016 (**Best Paper Finalist**)
44. Ming Ma, **Zhi Wang**, Ke Su, Lifeng Sun. "Understanding Content Placement Strategies in Smartrouter-based Peer Video CDN," in ACM SIGMM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2016), Klagenfurt am Wörthersee, Austria, May 10-13, 2016
45. Soham Sinha, Di Niu, **Zhi Wang**, Paul Lu. "Mitigating Routing Inefficiencies to Cloud-Storage Providers: A Case Study," in IEEE Workshop on Dependable Parallel, Distributed and Network-Centric Systems, Chicago, IL, USA, May 23-27, 2016
46. Xiaoyi Fan, Jiangchuan Liu, **Zhi Wang**, Yong Jiang. "Navigating the Last Mile with Crowdsourced Driving Information," in Proceedings of IEEE INFOCOM Workshop on Smart Cities and Urban Computing, San Francisco, CA, USA, April 10-15, 2016



47. Ouldooz Karimi, Jiangchuan Liu, **Zhi Wang**. “Power-Efficient Resource Utilization in Cellular Multimedia Multicast,” in Proceedings of IEEE International Conference on Mobile Ad-hoc and Sensor Networks, Shenzhen, China, December 16-18, 2015
48. Zhengyuan Pang, Lifeng Sun, **Zhi Wang**, Erfang Tian, Shiqiang Yang. “A Survey of Cloudlet based Mobile Computing,” in Proceedings of IEEE International Conference on Cloud Computing and Big Data, Taipei, November 4th-6th, 2015
49. Chenglin Zeng, **Zhi Wang**, Jing Zhang, Ringo Lam. “A Data-driven Study on Impact of Context on Mobile Video Recommendation,” in Proceedings of The Joint Conference on Harmonious Human Machine Environment, Huludao, China, September 11-13, 2015
50. **Zhi Wang**, “Social Media Distribution: A Data-driven Approach,” in Proceedings of ACM International Conference on Internet Multimedia Computing and Service (ICIMCS), Zhangjiajie, China, August 19-21, 2015
51. Wen Hu, **Zhi Wang**, Lifeng Sun, “Path-Aware Peer-Assisted Web Content Delivery against Network Failures,” in Proceedings of IEEE/ACM International Symposium on Quality of Service (IWQoS), Portland, OR, USA, June 15-16, 2015
52. Wenming Shi, **Zhi Wang**, Chao Zhou, Lifeng Sun, “Characterizing Viewing Engagement Patterns in DASH,” in Proceedings of IEEE ICME, Torino, Italy, June 29-July 3, 2015
53. Mohammad Hajiesmaili, Lok To Mak, **Zhi Wang**, Chuan Wu, Minghua Chen, Ahmad Khonsari, “Cost-Effective Low-Delay Cloud Video Conferencing,” in Proceedings of IEEE ICDCS, Columbus, Ohio, USA, June 29 - July 2, 2015
54. Wen Hu, **Zhi Wang**, Lifeng Sun, “Guyot: a Hybrid Learning- and Model-based RTT Predictive Approach,” in Proceedings of IEEE ICC, London, UK, June 8-12, 2015
55. Jingpu Duan, **Zhi Wang**, Chuan Wu, “Responsive Multipath TCP in SDN-based Datacenters,” in Proceedings of IEEE ICC, London, UK, June 8-12, 2015
56. Jincheng Zhang, Wenjie Zhang, Minghua Chen, **Zhi Wang**, “WINET: Indoor White Space Network Design,” in Proceedings of IEEE INFOCOM, Hong Kong, April 26-May 1, 2015. (CCF-A)
57. Xiahong Lin, **Zhi Wang**, Lifeng Sun, “MAP: Microblogging Assisted Profiling of TV Shows,” in Proceedings of International Conference on Multimedia Modeling (MMM), Sydney, Australia, January 5-7, 2015. (Best Student Paper Award)
58. Guanyu Gao, Weiwen Zhang, Yonggang Wen, **Zhi Wang**, Wenwu Zhu, Yap Peng Tan, “Cost Optimal Video Transcoding in Media Cloud: Insights from User Viewing Pattern,” in Proceedings of IEEE ICME, Chengdu, China, July 14-18, 2014.
59. Han Hu, Yonggang Wen, Tat-Seng Chua, **Zhi Wang**, Jian Huang, Wenwu Zhu, Di Wu, “Community Based Effective Social Video Contents Placement in Cloud Centric cdn Network,” in Proceedings of IEEE ICME, Chengdu, China, July 14-18, 2014.
60. Shengkai Shi, **Zhi Wang**, Chuan Wu, Xiaojun Lin, “Characterizing Cascade Dynamics in A Microblogging System,” in Proceedings of IEEE ICC, Sydney, Australia, June 10-14, 2014.

61. **Zhi Wang**, Lifeng Sun, Chuan Wu, Wenwu Zhu, Shiqiang Yang, “Joint On-line Transcoding and Geo-distributed Delivery for Dynamic Adaptive Streaming,” in Proceedings of **IEEE INFOCOM**, Toronto, Canada, April 27-May 2, 2014. (CCF-A)
62. Chong Yuan, **Zhi Wang**, Lifeng Sun, “TV6: A Revisit to System Design, User Socialization and Content Recommendation in Social TV,” in Proceedings of International Conferences on Advances in Multimedia (MMEDIA), Venice, Italy, April 21-26, 2013.
63. **Zhi Wang**, Baochun Li, Lifeng Sun, Shiqiang Yang, “Cloud-based Social Application Deployment using Local Processing and Global Distribution,” in Proceedings of **ACM CoNEXT**, Nice, France, December 10-13, 2012.
64. **Zhi Wang**, Lifeng Sun, Xiangwen Chen, Wenwu Zhu, Jiangchuan Liu, Minghua Chen, Shiqiang Yang. “Propagation-based Social-aware Replication for Social Video Contents,” in Proceedings of **ACM Multimedia** 2012, Nara, Japan, October 29-November 2, 2012. (Best Paper Award, CCF-A)
65. Xiaoyan Wang, Lifeng Sun, **Zhi Wang**, Da Meng. “Group Recommendation Using External Follower for Social TV,” in Proceedings of IEEE ICME 2012, Melbourne, Australia, July 9-13, 2012.
66. **Zhi Wang**, Lifeng Sun, Chuan Wu, Shiqiang Yang. “Guiding Internet-scale Video Service Deployment Using Microblog-based Prediction,” in Proceedings of **IEEE INFOCOM** 2012 Mini-Conference, Orlando, FL, USA, March 25-30, 2012. (CCF-A)
67. **Zhi Wang**, Lifeng Sun, Shiqiang Yang, Wenwu Zhu. “Prefetching Strategy in Peer-Assisted Social Video Streaming,” in Proceedings of **ACM Multimedia** 2011, Scottsdale, AZ, USA, November 28-December 1, 2011. (CCF-A)
68. **Zhi Wang**, Chuan Wu, Lifeng Sun, Shiqiang Yang. “Peer-Assisted Online Games with Social Reciprocity,” in Proceedings of **ACM/IEEE IWQoS** 2011, San Jose, CA, USA, June 6-7, 2011.
69. **Zhi Wang**, Chuan Wu, Lifeng Sun, Shiqiang Yang. “Strategies of Collaboration in Multi-channel P2P VoD Streaming,” in Proceedings of IEEE GLOBECOM 2010, Miami, FL, USA, December 6-10, 2010.
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71. Peng Cui, Lifeng Sun, **Zhi Wang**, Shiqiang Yang. “A Novel Segment-of-Interest Discovery Method for Surveillance Video,” in Proceedings of IEEE ICME 2007, Beijing, China, July 2-5, 2007.

**Professional Service Activities**

**Journal Editorships**

- Associate Editor, IEEE Transactions on Multimedia, 2019–
- Associate Editor, IEEE Open Journal of Communications Society, 2019–2020
- Guest Editor, ACM Transactions on Intelligent Systems and Technology (ACM TIST), Special issue on Data-driven Intelligence for Wireless Networking, 2016–2017
- Guest Editor, Special Section on Fog Computing, Journal of Computer and Technology (JCST), 2016–2017
- Guest Editor, Special Section on Networking and Distributed Computing for Big Data, Journal of Computer and Technology (JCST), 2015–2016

- Leading Guest Editor, Special Issue on Computer Network Design for Social Media, China Communications, 2015–2016

#### **Conference/IG Chairs**

- Chair, IEEE ComSoc Multimedia Big Data Special Interest Group, 2017–2018
- Co-Chair, IEEE ICME MuSIC Workshop 2017
- Track Chair, IEEE PhoneCom 2014, Hong Kong

#### **Membership in Technical Program Committees**

- ACM Multimedia (MM) 2014–
- CIKM 2019–
- ICDM 2018–
- ACM Multimedia Systems Conference (MMSys) 2014–
- IEEE International Conference on Mobile Ad hoc and Sensor Systems (MASS) 2015–
- IJCAI 2020
- ICCCRI 2016
- IEEE International Conference on Computer Communications (INFOCOM) 2015
- IEEE Big Data Congress 2015
- IEEE International Conference on Networking, Architecture, and Storage (NAS) 2015, 2014
- Pacific-Rim Conference on Multimedia (PCM) 2014
- IEEE International Conference on Cyber, Physical and Social Computing (CPSCom) 2014
- IEEE International Conference on Communications (ICC) 2014
- IEEE International Conference on Multimedia and Expo (ICME) 2013

#### **Reviewer**

- Journal: IEEE TMM, IEEE TCSVT, IEEE/ACM ToN, ACM TOMCCAP, IEEE TPDS, IEEE TMC, IEEE JSAC, IEEE ACCESS, Springer ComCom
- Conference: IEEE ICDM, IEEE VCIP, ACM Multimedia, ACM MMSys, NAS, CPSCOM, IEEE INFOCOM, ACM MOBICOM, IEEE IWQoS, IEEE ICNP, IEEE ICME, IEEE GLOBECOM, IEEE GLOBECOM

#### **EDICS Of Interest**

Ultra Low Delay Next Generation Multimedia Communication and Networking; Multimedia Streaming; Multimedia Networking and Processing in the Cloud and Data Centers; Joint Media and Multimodal Processing; Virtual Reality, Augmented Reality, and Virtual Environments; Deep Learning for Multimedia Analysis; Deep Learning for Multimedia Processing;

**Teaching  
Experience**

**Teaching**

Tsinghua University

- 64100033, **Foundations for Big Data Systems**, Fall 2014–  
• 16-week course on distributed systems and networks for big-data storage, processing and visualization.
- 60250131, **Seminars on Data Science and Applications**, Fall 2015–  
• 8-week course on frontier seminars of data science.
- 85990072, **Distributed Machine Learning Systems**, Spring 2021–  
• 16-week course on distributed machine learning systems and distributed optimization algorithms.
- 80240683, **Big Data Visualization**, Spring/Fall 2016–2020  
• 16-week course on big data visualization technologies.
- 86000152, **Foundations for Big-data Analytics**, Spring/Fall 2015–2018  
• 16-week course on introduction to big-data analytical techniques.