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- EDUCATION**
- University of Massachusetts, Amherst** Amherst, MA
Ph.D. in Electrical & Computer Engineering May, 2002
Thesis title: *Fluid Modelling and Analysis of Some Queueing and Network Issues*
Advisor: Weibo Gong
- University of Science & Technology of China** Hefei, China
M.S.E. in Electrical & Computer Engineering July, 1997
Thesis title: *Distributed Computer Control Systems: Design and Applications*
Advisor: Guozhong Pang
- University of Science & Technology of China** Hefei, China
B.S.E. in Electrical & Computer Engineering July, 1994
- POSITIONS**
- New York University, ECE Dept.** Brooklyn, NY
Associate Professor 09/2011-Present
- Polytechnic Institute of New York University , ECE Dept.** Brooklyn, NY
Assistant Professor 03/2005-08/2011
- University of Massachusetts, Computer Science Dept.** Amherst, MA
Postdoctoral Research Associate, Computer Networks Group 02/2002-03/2005
Advisors: Jim Kurose, Don Towsley
- University of Massachusetts, ECE Dept.** Amherst, MA
Research Assistant, Complex Systems Modelling and Control Lab 06/1998-01/2002
Advisor: Weibo Gong
- HONORS**
- Fellow**, Institute of Electrical and Electronics Engineers (IEEE), 2017
- Best Paper Award**, ACM Internet Measurement Conference (IMC), 2012
- Career Award**, National Science Foundation, 2010;
- Best Paper Award**, IEEE Conference on Computer and Communications (INFOCOM) 2009 (selected from 282 accepted papers out of 1,435 submissions);
- Best Paper Award**, IEEE Communication Society (ComSoc) Multimedia Communications Technical Committee, 2008 (selected from papers published in IEEE ComSoc sponsored journals and conferences in 2006 & 2007);
- Best Paper Award**, the First Workshop on Networks for Grid Applications (GridNets), October, 2004;
- Presidential Graduate Award**, Chinese Academy of Sciences, July, 1997;
- Guo Moruo Scholarship**, the highest scholarship of University of Science & Technology of China, September, 1993;

PUBLICATIONS

Books and Book Chapters

- Jelena Mirkovic and Yong Liu
Proceedings of 16th International Conference on Passive and Active Measurement PAM 2015,
Springer Lecture Notes in Computer Science, Volume 8995 2015
ISBN: 978-3-319-15508-1 (Print) 978-3-319-15509-8 (Online)

Journal Papers

- *Published or Accepted*
 1. Xiwang Yang, Chao Liang, Miao Zhao, Hongwei Wang, Hao Ding, Yong Liu, Yang Li, and Junlin Zhang,
“Collaborative Filtering Based Recommendation of Online Social Voting”,
in *IEEE Transactions On Computational Social Systems*, Volume 4, Issue 1, Pages 1-13, March 2017;
 2. Yang Xu, Yong Liu, Rahul Singh, and Shu Tao,
“SDN State Inconsistency Verification in OpenStack”,
in *Elsevier Computer Networks Journal*, Volume 110, Pages 364376, December 2016;
 3. Guibin Tian and Yong Liu,
“Towards Agile and Smooth Video Adaptation in HTTP Adaptive Streaming”,
in *IEEE/ACM Transactions on Networking*, Volume 24, Number 4, Pages 2386 – 2399 August 2016;
 4. Minhui Xue, Yong Liu, Keith Ross, Haifeng Qian,
“Thwarting Privacy Protection on Location-Based Social Discovery Services,”
in *Wiley Security and Communication Networks Journal*, Volume 9, Issue 11, Pages 14961508, July 2016
 5. Eymen Kurdoglu, Yong Liu, and Yao Wang,
“Dealing with User Heterogeneity in P2P Multi-party Video Conferencing: Layered Distribution vs. Partitioned Simulcast”,
in *IEEE Transactions on Multimedia*, Volume 18, Number 1, January 2016;
 6. Zheng Xue, Di Wu, Jian He, Xiaojun Hei, and Yong Liu,
“Playing High-End Video Games in the Cloud: A Measurement Study”,
in *IEEE Transactions on Circuits and Systems for Video Technology*, Volume 25, Number 12, December 2015;
 7. Can Yang and Yong Liu,
“On Achieving Short Channel Switching Delay and Playback Lag in IP-Based TV Systems”,
in *IEEE Transactions on Multimedia*, Volume 17, Number 7, Pages 1096 – 1106, July 2015;
 8. Long Hai, Hongyu Wang, Yong Liu, Jie Wang, and Zhenzhou Tang,
R²NC: Robust Inter-session Network Coding in Lossy Wireless Networks,
in *IET Communications*, Volume 9, Issue 2, Pages 184 – 195, January 2015;
 9. Tan Ba Le, Xing Chen, and Yong Liu,
“NCOM: Network Coding based Overlay Multicast in Wireless Networks”,
Springer Wireless Networks Journal, January 2015, Volume 21, Issue 1, pp 187-199;
 10. Chunxi Li, Changjia Chen, Yong Liu, and Baoxian Zhang,
“Threshold Bipolar Scheduling for P2P Live Streaming”,
Elsevier Computer Networks Journal, Volume 70, September, 2014;

11. Yang Zhao, Ye Tian, and Yong Liu,
“Extracting Viewer Interests for Automated Bookmarking in Video-on-Demand Services”,
Springer Frontiers of Computer Science Journal, September 2014;
12. Yang Xu, Chenguang Yu, Jingjiang Li, and Yong Liu,
“Video Telephony for End-consumers: Measurement Study of Google+, iChat, and Skype”,
in *IEEE/ACM Transactions on Networking*, Volume 22, Number 3, Pages 826 – 839, June, 2014;
13. Xiwang Yang, Yang Guo, Yong Liu, and Harald Steck,
“A Survey of Collaborative Filtering Based Social Recommender Systems”,
Elsevier Computer Communications Journal, Volume 41, 15 March 2014, Pages 110;
14. Yongxiang Zhao, Yong Liu, Changjia Chen, and JianYin Zhang,
“Enabling P2P One-view Multi-party Video Conferencing”,
In *IEEE Transactions on Parallel and Distributed Systems*, Volume 25, Issue 1, January 2014;
15. Yishuai Chen, Baoxian Zhang, Yong Liu, and Wei Zhu,
“Measurement and Modeling of Video Watching Time in a Large-Scale Internet Video-on-Demand System”,
in *IEEE Transactions on Multimedia*, Volume 15, Number 8, Pages 2087 – 2098, December 2013 ;
16. Xinggong Zhang, Yang Xu, Hao Hu, Yong Liu, Zongming Guo, and Yao Wang,
“Modeling and Analysis of Skype Video Calls: Rate Control and Video Quality”,
in *IEEE Transactions on Multimedia*, Volume 15, Number 6, Pages 1446 – 1457, October 2013 ;
17. Ye Tian, Ratan Dey, Yong Liu, and Keith W. Ross,
“Topology Mapping and Geolocating for Chinas Internet”,
in *IEEE Transactions on Parallel and Distributed Systems*, Volume 24, Issue 9, September 2013;
18. Yang Guo, Chao Liang, and Yong Liu,
“Hierarchically Clustered P2P Video Streaming: Design, Implementation, and Evaluation”,
in *Elsevier Computer Networks Journal*, Volume 56, Issue 15, October, 2012 ;
19. Xiwang Yang, Yang Guo, and Yong Liu,
“Bayesian-inference Based Recommendation in Online Social Networks”,
in *IEEE Transactions on Parallel and Distributed Systems*, Volume 24, Issue 4, April, 2013;
20. Chao Liang and Yong Liu,
“Enabling Broadcast of User-Generated Live Video without Servers”,
in *Journal of Peer-to-Peer Networking and Applications (PPNA)*, Volume 5, Number 3, 2012;
21. Chao Liang, Miao Zhao, and Yong Liu,
“Optimal Bandwidth Sharing in Multi-Swarm Multi-Party P2P Video Conferencing Systems”,
in *IEEE/ACM Transactions on Networking*, Volume 19, Number 6, Pages 1704 – 1716, December, 2011;
22. Hao Hu, Yang Guo, and Yong Liu,
“Peer-to-Peer Streaming of Layered Video: Efficiency, Fairness and Incentive”,
in *IEEE Transactions on Circuits and Systems for Video Technologies*, Volume 21, Number 8, Pages 1013 – 1026, August 2011;
23. Yong Liu,
“Delay Bounds of Chunk-based Peer-to-Peer Video Streaming”,
in *IEEE/ACM Transactions on Networking*, Volume 18, Number 4, Pages 1195 – 1206, August 2010;
24. Di Wu, Yong Liu and Keith Ross,
“Modeling and Analysis of Multi-Channel P2P Live Video Systems”,
in *IEEE/ACM Transactions on Networking*, Volume 18, Number 4, Pages 1248 – 1260, August 2010;

25. Sha Hua, Yang Guo, Yong Liu, Hang Liu, and Shivendra Panwar, “Scalable Video Multicast in Hybrid 3G/Ad-hoc Networks”, in *IEEE Transactions on Multimedia*, Volume 13, Number 2, Pages 402 – 413, April 2011;
26. Di Wu, Chao Liang, Yong Liu and Keith Ross, “Redesigning Multi-Channel P2P Video Systems with View-Upload Decoupling”, in *ELSEVIER Computer Networks journal*, Volume 54, Issue 12, August, 2010;
27. Chao Liang, Zhenghua Fu, Yong Liu and Chai Wah Wu, “iPASS: Incentivized Peer-assisted System for Asynchronous Streaming”, in *IEEE Transactions on Parallel and Distributed Systems*, Volume 21, Number 9, Pages 1354 – 1367, September, 2010;
28. Tan Ba Le and Yong Liu, “On the Capacity of Hybrid Wireless Networks with Opportunistic Routing”, in *EURASIP Journal on Wireless Communications and Networking*, Volume 2010, Pages 32 – 40, January 2010;
29. Zhiyong Huang, Xiaoping Zeng, and Yong Liu, “Detecting and Blocking P2P Botnets through Contact Tracing Chains”, in *International Journal of Internet Protocol Technology*, Volume 5, No.1/2, Pages 44 – 54, 2010;
30. Chao Liang, Yang Guo and Yong Liu, “Investigating the Scheduling Sensitivity of P2P Video Streaming: an experimental study”, in *IEEE Transactions on Multimedia*, Volume 11, Number 3, Pages 348 – 360, April 2009;
31. Yong Liu, Yang Guo and Chao Liang, “A Survey on Peer-to-Peer Video Streaming Systems”, in *Journal of Peer-to-Peer Networking and Applications (PPNA)*, (Springer), Pages 18 – 28, February, 2008 (**most downloaded paper of PPNA**);
32. Xiaojun Hei, Yong Liu and Keith Ross, “IPTV over P2P Streaming Networks: the Mesh-pull Approach”, in *IEEE Communications Magazine*, Pages 86 – 92, February, 2008;
33. Xiaojun Hei, Yong Liu and Keith Ross, “Inferring Network-Wide Quality in P2P Live Streaming Systems”, in *IEEE Journal on Selected Areas in Communications, special issue on advances in P2P streaming*, Volume 25, Number 9, Pages 1640 – 1654, December 2007, **awarded the Best Paper in Multimedia Communications by IEEE Communications Society in 2008**;
34. Xiaojun Hei, Chao Liang, Jian Liang, Yong Liu and Keith Ross, “A Measurement Study of a Large-Scale P2P IPTV System”, in *IEEE Transactions on Multimedia*, Volume 9, Number 8, Pages 1672 – 1687, December, 2007;
35. Weibo Gong, Yong Liu, Vishal Misra and Don Towsley, “Self-Similarity and Long Range Dependence on the Internet: A second look at the evidence, origins and implications”, in *Computer Networks Journal*, Volume 48, Issue 3, Pages 377 – 399, June 2005;
36. Yong Liu, Francesco Lo Presti, Vishal Misra, Don Towsley and Yu Gu, “Scalable Fluid Models and Simulations for Large-Scale IP Networks”, in *ACM Transactions on Modeling and Computer Simulation*, Vol. 14, No. 3, Pages 305 – 324, July 2004;
37. Yong Liu and Weibo Gong, “On Fluid Queueing System with Strict Priority”, in *IEEE Transactions on Automatic Control*, Volume 48, No. 12, Pages 2079 – 2088, December, 2003;

38. Yong Liu and Weibo Gong,
“Perturbation Analysis for Stochastic Fluid Queueing Systems”,
in *Discrete Event Dynamic Systems: Theory and Applications*, Volume 12, No. 4,
Pages 391–416, 2002;
39. Yong Liu and Guozhong Pang,
“Reconfigurable Sequential Control in Distributed Computer Control Systems”,
in *Journal of Micro-computer Informatics [in Chinese]*, October, 1997;

Conference Papers

- *Published or Accepted*

40. Chenguang Yu, Hao Ding, Houwei Cao, Yong Liu, and Can Yang,
“Follow Me: Personalized IPTV Channel Switching Guide”,
in the Proceedings of ACM Multimedia Systems 2017 Conference (MMSys 2017);
41. Rajeev Kumar, Robest Margolies, Rittwik Jana, Yong Liu, and Shivendra Panwar,
“WiLiTV: A Low-Cost Wireless Framework for Live TV Services”,
in IEEE INFOCOM Communication and Networking Techniques for Contemporary Video Work-
shop, 2017;
42. Fanyi Duanmu, Eymen Kurdoglu, Yong Liu and Yao Wang,
“View Direction and Bandwidth Adaptive 360 Degree Video Streaming using a Two-Tier System,
in the Proceedings of International Symposium on Circuits and Systems (ISCAS), 2017
43. Hao Ding, Jia Huang, Houwei Cao, and Yong Liu,
“Improving Cold Music Recommendation through Hierarchical Audio Alignment”,
in the Proceedings of IEEE International Symposium on Multimedia, (ISM), December, 2016;
44. Qiang Gong, Yuchun Guo, Yishuai Chen, Yong Liu, and Feng Xie,
“Design and Evaluation of a WiFi-Direct Based LTE Cooperative Video Streaming System”,
in the Proceedings of IEEE Global Communications Conference (GLOBECOM), December, 2016;
45. Hao Ding, Chenguang Yu, Guangyu Li and Yong Liu,
“Event Participation Recommendation in Event-based Social Networks”,
in the Proceedings of International Conference on Social Informatics (SocInfo), November, 2016;
46. Eymen Kurdoglu, Yong Liu, and Yao Wang,
“Real-time Bandwidth Prediction and Rate Adaptation for Video Calls over Cellular Networks”,
in the Proceedings of ACM Multimedia Systems 2016 Conference (MMSys 2016);
47. Yang Xu and Yong Liu
“DDoS Attack Detection under SDN Context”,
in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM), April,
2016; (*Acceptance Ratio*: 18.25%);
48. Luqin Wang, Trishank Kuppusamy, Justin Cappos, and Yong Liu “A Fast Multi-Server, Multi-Block
Private Information Retrieval Protocol”,
in the Proceedings of IEEE Global Communications Conference (GLOBECOM), December, 2015;
49. Yang Xu, Yong Liu, Rahul Singh, and Shu Tao,
“Identifying SDN State Inconsistency in OpenStack”,
Symposium on SDN Research (SOSR15), June 2015; (*Acceptance Ratio*: 19.7%);
50. Minhui Xue, Yong Liu, Keith Ross, Haifeng Qian,
“Thwarting Privacy Protection on Location-Based Social Discovery Services,”
IEEE INFOCOM Workshop on Security and Privacy in Big Data, Hong Kong, 2015;

51. Luqin Wang and Yong Liu
“Exploring Miner Evolution in Bitcoin Network”,
Passive and Active Measurement Conference (PAM) 2015;
52. Ratan Dey, Madhurya Nangia, Keith W. Ross, and Yong Liu,
“Estimating Heights from Photo Collections: A Data-Driven Approach”,
in the Proceedings of ACM Conference on Online Social Networks (COSN), October 2014; (*Acceptance Ratio*: 15.9%);
53. Chenguang Yu, Yang Xu, Bo Liu, and Yong Liu,
“Can you SEE me now?”, A Measurement Study of Mobile Video Calls,
in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM), April, 2014; (*Acceptance Ratio*: 19.4%);
54. Eymen Kurdoglu, Yong Liu, and Yao Wang,
“Dealing with User Heterogeneity in P2P Multiparty Video Conferencing: Layered Coding Versus Receiver Partitioning”,
in the Proceedings of IEEE INFOCOM Workshop on Communication and Networking Techniques for Contemporary Video, April, 2014;
55. Bin Nie, Honggang Zhang, and Yong Liu,
“Social Interaction Based Video Recommendation: Recommending YouTube Videos to Facebook Users”,
in the Proceedings of IEEE INFOCOM Workshop on Global Internet Symposium, April, 2014;
56. Jia Huang, Hao Ding, Xiaohua Hu, and Yong Liu,
“A Two-level Approach for Subtitle Alignment”,
in the Proceedings of 36th European Conference on Information Retrieval (Short Paper), 2-14;
57. Yishuai Chen, Baoxian Zhang, Yong Liu, and Wei Zhu
“On Distribution of User Movie Watching Time in a Large-scale Video Streaming System”,
in the Proceedings of IEEE International Conference on Communications (ICC), 2014;
58. Guibin Tian and Yong Liu,
“On Adaptive HTTP Streaming to Mobile Devices”,
in the Proceedings of Packet Video Workshop 2013;
59. Fraida Fund, Cong Wang, Yong Liu, Thanasis Korakis, Michael Zink, Shivendra Panwar,
“Mobile User Experience for DASH and WebRTC Video Services”,
in the Proceedings of Packet Video Workshop 2013;
60. Guibin Tian, Yang Xu, Yong Liu and Keith Ross,
“Mechanism Design for Dynamic P2P Streaming”,
in the Proceedings of 13th IEEE International Conference on Peer-to-Peer Computing, September, 2013, (*Acceptance Ratio*: 19.2%, **Finalist for Best Paper Award**);
61. Yang Xu, Yong Liu and Keith Ross,
“Capacity Analysis of Peer-to-Peer Adaptive Streaming”,
in the Proceedings of 13th IEEE International Conference on Peer-to-Peer Computing, September, 2013, (*Acceptance Ratio*: 19.2%);
62. Junlun Ma, Xiang Deng, Yong Liu and Di Wu,
“Power Consumption of Mobile Video Streaming under Adverse Network Conditions”,
IEEE/CIC International Conference on Communications in China (ICCC), 2013;
63. Guibin Tian and Yong Liu,
“Towards Agile and Smooth Video Adaptation in Dynamic HTTP Streaming”,
in the Proceedings of ACM International Conference on emerging Networking EXperiments and Technologies (CoNEXT 2012), December, 2012, (*Acceptance Ratio*: 18%);

64. Yang Xu, Chenguang Yu, Jingjiang Li, and Yong Liu, “Video Telephony for End-consumers: Measurement Study of Google+, iChat, and Skype”, in the Proceedings of ACM/USENIX Internet Measurement Conference (IMC 2012), Full Paper, November, 2012, (*Acceptance Ratio*: 19%, **sole winner of the Best Paper Award**);
65. Zhengye Liu, Yuan Ding, Yong Liu, and Keith Ross, “Peer-Assisted Distribution of User Generated Content”, in the Proceedings of 12th IEEE International Conference on Peer-to-Peer Computing, September, 2012, (*Acceptance Ratio*: 24%);
66. Xiwang Yang, Harald Steck, Yang Guo, and Yong Liu, “On Top-k Recommendation using Social Networks”, in the Proceedings of 6th ACM Conference on Recommender Systems (RecSys 2012), Long Paper, September, 2012, (*Acceptance Ratio*: 20.2%);
67. Xiwang Yang, Harald Steck and Yong Liu, “Circle-based Recommendation in Online Social Networks”, in the Proceedings of ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), Long Paper, August, 2012 (*Acceptance Ratio*: 17.6%);
68. Xinggong Zhang, Yang Xu, Hao Hu, Yong Liu, Zongming Guo, and Yao Wang, “Profiling Skype Video Calls: Rate Control and Video Quality”, in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM), March, 2012, (*Acceptance Ratio*: 18%);
69. Ye Tian, Ratan Dey, Yong Liu, and Keith W. Ross, “Chinas Internet: Topology Mapping and Geolocating”, in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM) Mini-Conference, March, 2012;
70. Xiwang Yang, Yang Guo, and Yong Liu, “Bayesian-inference Based Recommendation in Online Social Networks”, in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM) Mini-Conference, April, 2011, (*Acceptance Ratio*: 22.3%);
71. Chao Liang and Yong Liu, “ViVUD: Virtual Server Cluster based View-Upload Decoupling for Multi-Channel P2P Video Streaming Systems”, in the Proceedings of IEEE Global Communications Conference (GLOBECOM), 2010;
72. Tan Ba Le and Yong Liu, “Opportunistic Overlay Multicast in Wireless Networks”, in the Proceedings of IEEE Global Communications Conference (GLOBECOM), 2010;
73. Hao Hu, Yang Guo, and Yong Liu, “Mesh-based Peer-to-Peer Layered Video Streaming With Taxation”, in the Proceedings of ACM Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV), Pages 27 – 32, June, 2010;
74. Zhengye Liu, Hao Hu, Yong Liu, Keith Ross, Yao Wang, and Markus Mobius, “P2P Trading in Social Networks: The Value of Staying Connected”, in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM), Pages 2489 – 2497, March, 2010 (*Acceptance Ratio*: 17.4%);
75. Yan Cai, Yong Liu, Weibo Gong and Tilman Wolf, “Impact of Arrival Burstiness on Queue Length: An Infinitesimal Perturbation Analysis”, in the Proceedings of IEEE Conference on Decision and Control (CDC), Pages 7068 – 7073, December, 2009;

76. Sha Hua, Yang Guo, Yong Liu, Hang Liu, and Shivendra Panwar, “Scalable Video Multicast in Hybrid 3G/Ad-hoc Networks”, in the Proceedings of IEEE IEEE Global Communications Conference (GLOBECOM), Pages 4662 – 4667, November, 2009;
77. Di Wu, Yong Liu and Keith Ross, “Queuing Network Models for Multi-Channel P2P Live Streaming Systems”, in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM), Pages 73 – 81, April, 2009, (*Acceptance Ratio*: 19%, **sole winner of the Best Paper Award**);
78. Chao Liang, Zhenghua Fu, Yong Liu, and Chai Wah Wu, “iPASS: Incentivized Peer-assisted System for Asynchronous Streaming”, in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM) Mini-Conference, Pages 2741 – 2745, April, 2009, (*Acceptance Ratio*: 26%);
79. Di Wu, Chao Liang, Yong Liu and Keith Ross, “View-Upload Decoupling: A Redesign of Multi-Channel P2P Video Systems”, in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM) Mini-Conference, Pages 2726 – 2730, April, 2009, (*Acceptance Ratio*: 26%);
80. Sha Hua, Yang Guo, Yong Liu, Hang Liu, Shivendra S. Panwar, “Broadcasting over Cellular Networks: Video Quality Improvement using Scalable Video Coding (SVC) and Dual Mobile Interfaces”, in IBC Conference, Amsterdam, Netherlands, September 2009;
81. Tan Ba Le and Yong Liu, “On the Capacity of Hybrid Wireless Networks with Opportunistic Routing”, in the Proceedings of International Conference on Wireless Algorithms, Systems and Applications, Pages 210 – 223, August, 2009;
82. Chao Liang, Yong Liu, and Keith Ross, “Topology Optimization in Multi-Tree Based P2P Streaming System”, in the Proceedings of International Conference on Tools with Artificial Intelligence, Pages 806 – 813, November, 2009;
83. Yang Guo, Chao Liang, and Yong Liu, “Naivet vs. Sophistication: Is Random Scheduling Enough for P2P-based IPTV Service?”, IBC Conference, Amsterdam, Netherlands, September 2008;
84. Yang Guo, Chao Liang, and Yong Liu, “dHCPS: Decentralized Hierarchically Clustered P2P Video Streaming”, in the Proceedings of ACM International Conference on Image and Video Retrieval (CIVR), Pages 655 – 662, July, 2008;
85. Chao Liang, Yang Guo and Yong Liu, “Is Random Scheduling Sufficient in P2P Video Streaming?”, in the Proceedings of the 28th International Conference on Distributed Computing Systems (ICDCS), Pages 53 – 60, June, 2008 (*Acceptance Ratio*: 16%);
86. Yang Guo, Chao Liang, and Yong Liu, “Adaptive Queue-based Chunk Scheduling for P2P Live Streaming”, in the Proceedings of IFIP Networking, Pages 433 – 444, May, 2008;
87. Yong Huang, Yong Liu, Weibo Gong and Don Towsley, “Two-level Stochastic Fluid Tandem Queuing Model for Burst Impact Analysis”, in the Proceedings of IEEE Conference on Decision and Control (CDC), Pages 3042 – 3047, December, 2007;

88. Chao Liang, Yang Guo and Yong Liu,
“Hierarchically Clustered P2P Streaming System”,
in the Proceedings of IEEE Global Communications Conference (GLOBECOM),
Pages 236 – 241, November, 2007;
89. Chao Liang, Zihui Ge and Yong Liu,
“Joint Traffic Blocking and Routing under Network Failures and Maintenances”,
in the Proceedings of IEEE Global Communications Conference (GLOBECOM),
Pages 2752 – 2756, November, 2007;
90. John Buford, Angela Wang, Xiaojun Hei, Yong Liu and Keith Ross,
“Discovery of In-Band Streaming Services in Peer-to-Peer Overlays”,
in the Proceedings of IEEE Global Communications Conference (GLOBECOM),
Pages 242 – 247, November, 2007;
91. Yong Liu,
“On the Minimum Delay Peer-to-Peer Video Streaming: how realtime can it be?”,
in the Proceedings of ACM Multimedia, Pages 127 – 136, September, 2007
(*Acceptance Ratio*: 19%);
92. Rakesh Kumar, Yong Liu and Keith Ross,
“Stochastic Fluid Theory for P2P Streaming Systems”,
in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM),
Pages 919 – 927, May, 2007 (*Acceptance Ratio*: 18%);
93. Chun Zhang, Jim Kurose, Yong Liu, Don Towsley and Michael Zink,
“A Distributed Algorithm for Joint Sensing and Routing in Wireless Networks with Non-Steerable
Directional Antennas”,
in the Proceedings of 14th IEEE International Conference on Network Protocols (ICNP),
Pages 218 – 227, November, 2006 (*Acceptance Ratio*: 14.2%);
94. Xiaojun Hei, Chao Liang, Jian Liang, Yong Liu and Keith Ross,
“Insight into PPLive: A Measurement Study of a Large-Scale P2P IPTV System”,
WWW 2006 workshop of IPTV services over World Wide Web, May 2006;
95. Tian Bu, Yong Liu, and Don Towsley,
“On the TCP-Friendliness of VoIP Traffic”,
in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM),
April, 2006 (*Acceptance Ratio*: 18%).
96. Chun Zhang, Zihui Ge, Jim Kurose, Yong Liu, and Don Towsley,
“Optimal Routing with Multiple Traffic Matrices: Tradeoff between Average Case and Worst Case
Performance”,
in the Proceedings of 13th IEEE International Conference on Network Protocols (ICNP),
Pages 215 – 224, November, 2005 (*Acceptance Ratio*: 17%);
97. Yong Liu, Don Towsley, Tao Ye and Jean Bolot,
“An Information-Theoretic Approach to Network Monitoring and Measurement”,
in the Proceedings of ACM SIGCOMM Internet Measurement Conference (IMC),
Pages 159 – 172, October, 2005 (*Acceptance Ratio*: 15%);
98. Yong Liu, Honggang Zhang, Weibo Gong and Don Towsley,
“On the Interaction Between Overlay Routing and Traffic Engineering”,
in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM)'05,
Volume 4, Pages 2543 – 2553, Miami, March 2005 (*Acceptance Ratio*: 17.2%);
99. Chun Zhang, Yong Liu, Weibo Gong, Jim Kurose, Robert Moll and Don Towsley,
“On Optimal Routing with Multiple Traffic Matrices”,

- in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM)'05, Volume 1, Pages 607 – 618, Miami, March 2005. (*Acceptance Ratio*: 17.2%)
100. Songlin Cai, Yong Liu and Weibo Gong,
“Client-Controlled Slow TCP and Denial of Service”,
in the Proceedings of IEEE Conference on Decision and Control (CDC)'04,
Volume 1, Pages 81 – 86, December 2004.
 101. Yong Liu, Yu Gu, Honggang Zhang, Weibo Gong and Don Towsley,
“Application Level Relay for High-bandwidth Data Transport”,
in the Proceedings of the First Workshop on Networks for Grid Applications (GridNets),
Pages 1 – 10, San Jose, October 2004, **sole winner of the Best Paper award**;
 102. Honggang Zhang, Yong Liu, Weibo Gong and Don Towsley,
“On the Interaction Between Overlay Routing and MPLS Traffic Engineering”,
in ACM/SIGCOMM, Poster Session, Portland, August 2004;
 103. Yu Gu, Yong Liu and Don Towsley,
“On Integrating Fluid Models with Packet Simulation”,
in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM)'04,
Pages 2856 – 2866, Hong Kong, March 2004. (*Acceptance Ratio*: 18.4%);
 104. Xiang Yu, Chunming Qiao and Yong Liu,
“TCP Implementations and False Time Out Detection in Optical Burst Switching Networks”,
in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM)'04,
Pages 774 – 784, Hong Kong, March 2004. (*Acceptance Ratio*: 18.4%);
 105. Songlin Cai, Yong Liu and Weibo Gong,
“Analysis of an AIMD Based Collision Avoidance Protocol in Wireless Data Networks”,
in the Proceedings of IEEE Conference on Decision and Control (CDC)'03, Volume 1,
Pages 104 – 109, Hawaii, December 2003;
 106. Yong Liu, Francesco Lo Presti, Vishal Misra, Don Towsley and Yu Gu,
“Fluid Models and Solutions for Large-Scale IP Networks”,
in the Proceedings of ACM International Conference on Measurement and Modeling of Computer
Systems (SIGMETRICS)'03, Pages 91 – 101, San Diego, June 2003. (*Acceptance Ratio*: 11.7%);
 107. Christopher Holot, Yong Liu, Vishal Misra and Don Towsley,
“Unresponsive Flows and AQM Performance”,
in the Proceedings of IEEE Conference on Computer and Communications (INFOCOM)'03,
Volume 22, No. 1, Pages 85 – 95, San Francisco, April 2003, (*Acceptance Ratio*: 20.8%);
 108. Yong Liu and Weibo Gong,
“Challenges to Congestion Control posed by Concurrent Downloads”,
in the Proceedings of 41st IEEE Conference on Decision and Control (CDC)'02, Volume 2,
Pages 2017-2022, Las Vegas, December 2002;
 109. Yong Liu and Weibo Gong,
“On Fluid Queueing System with Strict Priority”,
in the Proceedings of IEEE Conference on Decision and Control (CDC)'01, Volume 2,
Pages 1923-1928, Orlando, December 2001;
 110. Yong Liu, Weibo Gong and Prashant Shenoy,
“On the Impact of Concurrent Downloads”,
in *Proceedings of Winter Simulation Conference*, Pages 1300 – 1305, Arlington, December 2001;
 111. Weibo Gong, Yong Liu, Vishal Misra and Don Towsley,
“On the Tails of Web File Size Distributions”,

in the Proceedings of 39th Annual Allerton Conference on Communication, Control and Computing, October 2001;

112. Yong Liu and Weibo Gong,
“Perturbation Analysis for Stochastic Fluid Queueing Systems”,
in the Proceedings of IEEE Conference on Decision and Control (CDC)’99, Volume 5,
Pages 4440 – 4445, Phoenix, December 1999;

Technical Reports

1. Tan Ba Le and Yong Liu,
“NCOM: Network Coding based Overlay Multicast in Wireless Networks”,
Technical Report, Polytechnic Institute of NYU, January 2011;
2. Yong Liu,
“Optimal Cross-layer Scheduling for Multicast in Multi-Channel Wireless Networks”,
Technical Report, Polytechnic Institute of NYU, December 2009;
3. Chao Liang, Zihui Ge, and Yong Liu,
“Joint Traffic Blocking and Routing under Network Failures and Maintenance”,
Technical Report, Polytechnic Institute of NYU, May 2009;
4. Yong Liu, Don Towsley, Jing Weng and Dennis L. Goeckel,
“An Information Theoretic Approach to Network Trace Compression”,
UMass Technical Report, 2004;

GRADUATE STUDENTS

PhD Dissertations

1. **Chao Liang**, PhD in EE, September 2005 – November 2010,
Dissertation Title: “*Towards High-Performance Peer-to-Peer Media Communications: Measurement, Design and Optimization*”.
Research on the measurement of large-scale commercial P2P video streaming system, analysis and design of optimal P2P streaming scheduling, and prototyping and experimentation on the Internet.
Best PhD Dissertation Award of ECE Department in 2010
2. **Tan Ba Le**, PhD in EE, September 2005 – January 2011,
Dissertation Title, “*Exploiting the Gain of Opportunistic Routing in Wireless Networks*”.
Research on the gain of opportunistic routing in hybrid wireless networks, and network-coding based overlay multicast in wireless networks.
3. **Hao Hu**, PhD in EE, August 2007 – January 2012, jointly advising with Prof. Yao Wang
Dissertation Title, “*Application Layer System Design for Layered Video Streaming*”.
Research on streaming of layered video in the context of P2P, Adaptive HTTP streaming, and wireless networks.
4. **Xiwang Yang**, PhD in EE, September 2008 – November 2013,
Dissertation Title, “*Collaborative Filtering based Social Recommender Systems*”. Research on improving accuracy of recommender systems using information derived from online social networks.
Best PhD Dissertation Award of ECE Department in 2013

5. **Guibin Tian**, PhD in EE, September 2010 – July 2015,
Dissertation Title, “*Rate Adaptation and Content Delivery in Video Streaming*” Research on adaptive video streaming and multiple-path IP transmission
6. **Yang Xu**, PhD in EE, September 2010 – March 2016;
Dissertation Title, “*Analysis of Multimedia and Software Defined Network Systems*”
7. **Luqin Wang**, PhD in CS, September 2011– December 2016;
Dissertation Title, “*Understanding And Improving The Security Of Collaborative Distributed Systems*”
8. **Chenguang Yu**, PhD in EE, September 2013 – December 2016;
Dissertation Title, “*Analysis of Internet Applications - from protocols to user behaviors*”
9. **Eymen Kurdoglu**, PhD in EE, jointly advising with Prof. Yao Wang, January 2012 –;
10. **Hao Ding**, PhD in EE, September 2012 –;
11. **Guangyu Li**, PhD in EE, September 2014 –;
12. **Liyang Sun**, Phd in EE, September 2016 –;

Master Thesis

1. **Haigen Li**, MS in Telecommunication Networks
Thesis Title, “P2P Video-on-Demand System”, January 2009 – January 2010;
2. **Wei Chen**, MS in Telecommunication Networks
Thesis Title, “A Measurement Study of A Commercial Grid Application”, January 2008 – January 2009;
3. **Winiga Sontoua**, BS/MS in EE
Thesis Title, “TCP Throughput Improvement Using Relay Nodes”, September 2007 – June 2007;
4. **Yanwei Tang**, MS in EE (joint program with Nanjing University, China)
Thesis Title, “Simulation of Recommendation System”, September 2010 – June 2011;
5. **Jingjian Li**, MS in EE
Thesis Title, “Measurement Study of Multi-party Video Conferencing Systems”
January 2011 – January 2012.

Ph.D Proposal/Thesis Committee Served on:

- NYU-Poly EE: Zizhong Cao, Baris Coskun, Juan Fang, Tzipora Halevi, Xiao Han, Amir Hosseini, Sha Hua, Hao Hu, Changkyu Kim, Rakesh Kumar, Georgios Kyriakou, Ivan Lam, Pei Liu, Tao Liu, Zhengye Liu, Chun Nie, Yen-fu Ou, Ayaskant Rath, Huizhong Sun, Adrian Tam, Meng Xu, Shunyuan Ye, Zihao You, Junjie Zhang;
- NYU-Poly CS: Huseyin Akcan, Ratan Dey, Shuai Ding, Yuan Ding, Prithula Dhungel, Bluma Gelley, Jinru He, Vassil Kriakov, Liyun Li, Jian Liang, Xiang Liu, Sergey Nepomnyachiy, Tehila Minkus, Angela Wang, Hao Yan, Chao Zhang, Chi Zhang, Yeling Zhang, Chixiang Zhou,
- Columbia CS: Eli Brosh

Advised 120+ MSTN student design projects

PROFESSIONAL SERVICE

- Editor, *IEEE/ACM Transactions on Networking*; 2012 - 2016
- Editor, *Elsevier Computer Networks Journal*; 2012 - 2016
- Editor, *China Communications Magazine*;
- TPC Chair, ACM SIGCOMM Workshop on Virtual Reality and Augmented Reality Network, 2017
- General Chair, Passive and Active Measurement Conference, 2015;
- General Chair, IEEE Conference on Peer-to-Peer Computing, 2015
- Workshop Co-chair, HotMD Hot Topics in Multimedia Delivery, 2011;
- Publicity Chair, ACM Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV) 2011;
- Tutorials Chair, ACM International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS) 2010;
- Publication/Web Chair, IEEE Workshop on High Performance Switching and Routing (HPSR) 2007;
- Technical Program Committee Member for
 - IEEE International Conference on Network Protocols (ICNP), 2015, 2016, 2017
 - IEEE Conference on Computer and Communications (INFOCOM) 2014, 2015, 2016, 2017, 2018
 - 29th International Teletraffic Congress (ITC 29), 2017
 - ACM Multimedia 2013, 2017
 - ACM Multimedia Systems 2017
 - IEEE Conference on Peer-to-Peer Computing (P2P) 2014
 - IFIP International Conference on Networking (Networking) 2014
 - ACM Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV) 2012, 2013, 2014, 2017
 - IEEE Conference on Computer and Communications (INFOCOM) 2013
 - IFIP International Conference on Networking (Networking) 2013
 - IEEE International Conference on Computer Communications and Networks (ICCCN) 2013
 - IEEE Conference on Computer and Communications (INFOCOM) 2012
 - IEEE Conference on Computer and Communications (INFOCOM) 2011
 - ACM International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS) 2011
 - IEEE International Conference on Distributed Computing Systems (ICDCS) 2011
 - IEEE International Conference on Multimedia & Expo (ICME 2011)
 - IEEE Conference on Computer and Communications (INFOCOM) 2010
 - ACM Multimedia 2010
 - IEEE International Conference on Distributed Computing Systems (ICDCS) 2010

- ACM Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV) 2010
 - IFIP International Conference on Networking (Networking) 2010
 - ACM Multimedia 2009
 - IEEE Conference on Computer and Communications (INFOCOM) 2009
 - IEEE Global Communications Conference (GLOBECOM) 2009
 - International Workshop on Peer-To-Peer Systems (IPTPS) 2009
 - ACM Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV) 2009
 - International Conference on Queueing Theory and Network Applications (QTNA) 2009
 - IEEE Consumer Communications and Networking Conference (CCNC) 2009
 - IEEE International Conference on Distributed Computing Systems (ICDCS) 2008
 - ACM International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS) 2008
 - ACM Sigcomm CoNEXT 2008
 - IEEE Consumer Communications and Networking Conference (CCNC) 2008
 - International Conference on Computer Communications and Networks (ICCCN) 2008
 - ACM SIGCOMM 2007 P2P-TV Workshop
 - ACM SIGMETRICS 2007 Student Workshop
 - IFIP International Symposium on Computer Performance, Modeling, Measurements and Evaluation (PERFORMANCE) 2007
 - International ICST Conference on Testbeds and Research Infrastructures for the Development of Networks and Communities (TridentCom) 2007
 - International Conference on Computer Communications and Networks (ICCCN) 2007
 - International Conference on Computer Communications and Networks (ICCCN) 2006
- Referee for submissions to the following professional journals:
 - *IEEE/ACM Transactions on Networking*;
 - *IEEE Journal on Selected Areas in Communications*;
 - *IEEE Transactions on Multimedia*;
 - *IEEE Transactions on Automatic Control*;
 - *IEEE Transactions on Information Theory*;
 - *IEEE Transactions on Computers*;
 - *IEEE Transactions on Network and Service Management*;
 - *IEEE Transactions on Parallel and Distributed Systems*;
 - *ACM Computer Communication Review*;
 - *ACM Transactions on Multimedia Computing Communications and Applications*;
 - *Automatica*;
 - *Elsevier Computer Networks Journal*;
 - *Elsevier Computer Communications*;

- *Elsevier Optical Switching and Networking journal*;
- *Springer Multimedia Systems Journal*;
- *Springer Peer-to-Peer Networking and Applications Journal*;
- *IEEE Communications Magazine*;
- *IEEE Network Magazine*;
- *IEEE Internet Computing*;
- *Journal of Discrete Event Dynamic Systems*;
- *Journal of Visual Communication and Image Representation*;

SEMINAR PRESENTATIONS

- Measurement Study of Video Call Applications, George Washington University, Washington D. C., February, 2014;
- Measurement Study of Video Call Applications, Cisco, San Jose, CA, December, 2013;
- P2P Trading in Social Networks: The Value of Staying Connected, Bell Labs, Murray Hill, NJ, August 2011;
- Towards Friend-to-Friend IPTV, NAPA-WINE P2P TV Workshop, January, 2011;
- Bayesian-inference Based Recommendation in Online Social Networks, Columbia, CS, October 2010;
- Modeling and Analysis of Multi-Channel P2P Live Video Systems, University of Science and Technology of China, July 2010;
- P2P Trading in Social Networks: The Value of Staying Connected, Huazhong University of Science and Technology, China, June 2010;
- View-Upload Decoupling: A Redesign of Multi-Channel P2P Video Systems, IBM T.J. Watson Research Labs, March 2010;
- Gain of Opportunistic Routing in Hybrid Wireless Networks and Wireless Multicast, InterDigital, Long Island, NY, November 2009;
- Scalable Video Multicast in Hybrid 3G/Ad-hoc Networks, NSF WiCAT Annual Meeting, University of Virginia, November 2009;
- iPASS: Incentivized Peer-assisted System for Asynchronous Streaming, NYSTAR CATT Annual Meeting, October 2009;
- Law of Large Numbers in P2P Video Streaming, NJIT CS, October 2009;
- View-Upload Decoupling: A Redesign of Multi-Channel P2P Video Systems, WOCC, May 2009;
- Queuing Network Models for Multi-Channel P2P Live Streaming Systems, INFOCOM, April 2009;
- View-Upload Decoupling: A Redesign of Multi-Channel P2P Video Systems, INFOCOM, April 2009;
- Law of Large Numbers in P2P Video Streaming, WIN Lab, Rutgers University, November 2008;

- ISP-Centric P2P Sharing Applications, TimeWarner Cable, New York, November 2008;
- Is Random Scheduling Sufficient in P2P Video Streaming?, ICDCS, Beijing, June, 2008
- Exploring Fundamental Performance Bounds of P2P Video Streaming, Tsinghua University, Beijing, China, June, 2008
- P2P Live Video Streaming: the success and the limit, IBM T.J. Watson Research Labs, February 2008;
- P2P IPTV: current practice and future, Verizon Labs, Waltham, MA, November, 2007
- On the Minimum Delay Peer-to-Peer Video Streaming: how realtime can it be?, ACM Multimedia, September, 2007
- Large-scale P2P Video Streaming on the Internet, Huawei Corporate Research, Nanjing, China, August, 2007;
- Stochastic Fluid Theory for P2P Streaming, NYC P2P Workshop, May 2007
- Stochastic Fluid Theory for P2P Streaming, INFOCOM, Alaska, May 2007
- P2P Live Video Streaming: the success and the limit, WOCC, April 2007;
- A Measurement Study of a Large-Scale P2P IPTV System, Thomson Research Labs, Princeton, NJ, October 2006;
- Insight into PPLive: A Measurement Study of a Large-Scale P2P IPTV System, WWW 2006 workshop of IPTV services over World Wide Web, May 2006;
- On the TCP-Friendliness of VoIP Traffic, INFOCOM, Barcelona, April, 2006;
- An Information-Theoretic Approach to Network Monitoring and Measurement, IMC 2005;

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1. Yong Liu, Yang Xu, Chenguang Yu, "Determining User Perceived Delays in Voice Conference Systems and Video Conferencing Systems", US Patent # US 9,628,525 B2, Issues on April 18, 2017
2. Yong Liu, "Reducing or minimizing delays in peer-to-peer communications such as peer-to-peer video streaming", US Patent # US 8,005,975 B2, Issued on August 23, 2011;
3. Yong Liu and Keith Ross, "View-upload decoupled peer-to-peer video distribution systems and methods", US Patent # US 7,970,932 B2, Issued on June 28, 2011;
4. Stevan H. Leiden, Yong Liu, Shivendra Panwar and Ayaskant Rath, "Peer-to-peer voice over internet protocol", US Patent # 8,315,521 B2, Issued on November 20, 2012;
5. Chao Liang, Yang Guo, and Yong Liu, "Hierarchically Clustered P2P Streaming System", PU070061, Filed 04/2007, PENDING;
6. Chao Liang, Yang Guo, and Yong Liu, "Achieving Maximum Streaming Rate Using Decentralized Perfect Scheduling Algorithm", PU070154, Filed 05/2007, PENDING;
7. Yang Guo, Chao Liang, and Yong Liu, "Decentralized Hierarchically Clustered P2P Live Streaming System", PU080017, Filed 02/2008, PENDING;

8. Chao Liang, Yang Guo, and Yong Liu, "Multi-Head Hierarchically Clustered P2P Streaming System", PU080069, Filed 05/2008, PENDING;
9. Sha Hua, Yang Guo, Yong Liu, Hang Liu, and Shivendra S. Panwar, "Apparatus For Scalable Video Multicast Over Hybrid Network", PU090030, Filed 03/2009, PENDING;
10. Hao Hu, Yang Guo, and Yong Liu, "Apparatus For Peer-To-Peer Streaming Of Layered Video", PU090057, Filed 06/2009, PENDING;
11. Xiwang Yang, Yang Guo, and Yong Liu, "Bayesian Inference Based Recommendation In Social Network", PU100096, Filed 04/2010, PENDING;
12. Yong Liu and Keith Ross, "View Upload Decoupled Peer To Peer Video Distribution Systems And Methods", Filed 12/2008, PENDING;
13. Stevan Leiden, Ayaskant Rath, Yong Liu, Shiv Panwar, and Keith Ross, "Peer-to-Peer Voice over Internet Protocol", Filed 12/2009, PENDING.