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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 (USTC) 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 **Polytechnic University, Electrical & Computer Engineering Dept.** Brooklyn, NY
Assistant Professor 03/2005-Present

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

Bell Labs, Networking Technologies and Performance Dept. Holmdel, NJ
Co-op 09/2000-03/2001

Bell Labs, Networking Technologies and Performance Dept. Holmdel, NJ
Summer Intern 06/2000-09/2000

HONORS

- **Best Paper Award**, the First Workshop on Networks for Grid Applications (Grid-Nets), 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

- **Journal Papers**
 1. 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*, by Springer New York, February, 2008
 2. Xiaojun Hei, Yong Liu and Keith Ross, "IPTV over P2P Streaming Networks: the Mesh-pull Approach", in *IEEE Communications Magazine*, February 2008;

3. 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. December 2007;
 4. 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*, December, 2007;
 5. 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, June 2005;
 6. 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;
 7. 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;
 8. 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;
 9. 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**
 1. Chao Liang, Yang Guo and Yong Liu, "Is Random Scheduling Sufficient in P2P Video Streaming?", to appear in the Proceedings of the 28th International Conference on Distributed Computing Systems (ICDCS 2008), June, 2008 (*Acceptance Ratio: < 16%*);
 2. Yang Guo, Chao Liang, and Yong Liu, "Adaptive Queue-based Chunk Scheduling for P2P Live Streaming", to appear in the Proceedings of IFIP Networking, May, 2008;
 3. 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), December 2007;
 4. Chao Liang, Yang Guo and Yong Liu, "Hierarchically Clustered P2P Streaming System", in the Proceedings of IEEE Global Communications Conference (GLOBECOM), November, 2007;
 5. 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), November, 2007;
 6. John Buford, Angela Wang, Xiaojun Hei, Yong Liu and Keith Ross, "Discovery of In-Band Streaming Services in Peer-to-Peer Overlays", to appear in the Proceedings of IEEE Global Communications Conference (GLOBECOM), November, 2007;
 7. Yong Liu, "On the Minimum Delay Peer-to-Peer Video Streaming: how realtime can it be?", in the Proceedings of ACM Multimedia, September, 2007 (*Acceptance Ratio: 19%*);

8. 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) 2007 (*Acceptance Ratio*: 18%);
9. 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) 2006 (*Acceptance Ratio*: 14.2%).
10. 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;
11. 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) 2006 (*Acceptance Ratio*: 18%).
12. 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) 2005 (*Acceptance Ratio*: 17%).
13. 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) 2005 (*Acceptance Ratio*: 15%).
14. Yong Liu, Honggang Zhang, Weibo Gong and Don Towsley, "On the Interaction Between Overlay Routing and Traffic Engineering", to appear in *Proceedings of IEEE Conference on Computer and Communications (INFOCOM)'05*, Miami, March 2005 (*Acceptance Ratio*: 17.2%).
15. Chun Zhang, Yong Liu, Weibo Gong, Jim Kurose, Robert Moll and Don Towsley, "On Optimal Routing with Multiple Traffic Matrices", to appear in *Proceedings of IEEE Conference on Computer and Communications (INFOCOM)'05*, Miami, March 2005. (*Acceptance Ratio*: 17.2%)
16. Songlin Cai, Yong Liu and Weibo Gong, "Client-Controlled Slow TCP and Denial of Service", appeared in *IEEE Conference on Decision and Control (CDC)'04*, December 2004.
17. Yong Liu, Yu Gu, Honggang Zhang, Weibo Gong and Don Towsley, "Application Level Relay for High-bandwidth Data Transport", recipient of the *BEST PAPER AWARD* of the First Workshop on Networks for Grid Applications (GridNets), Pages 1-10, San Jose, October 2004.
18. 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.
19. Yu Gu, Yong Liu and Don Towsley, "On Integrating Fluid Models with Packet Simulation", in *Proceedings of IEEE Conference on Computer and Communications (INFOCOM)'04*, Pages 2856-2866, Hong Kong, March 2004. (*Acceptance Ratio*: 18.4%)
20. Xiang Yu, Chunming Qiao and Yong Liu, "TCP Implementations and False Time Out Detection in Optical Burst Switching Networks", in *Proceedings of IEEE Conference on Computer and Communications (INFOCOM)'04*, Pages 774-784, Hong Kong, March 2004. (*Acceptance Ratio*: 18.4%)

21. Songlin Cai, Yong Liu and Weibo Gong “Analysis of an AIMD Based Collision Avoidance Protocol in Wireless Data Networks”, in *Proceedings of IEEE Conference on Decision and Control (CDC)’03*, Volume 1, Pages 104-109, Hawaii, December 2003.
22. Yong Liu, Francesco Lo Presti, Vishal Misra, Don Towsley and Yu Gu, “Fluid Models and Solutions for Large-Scale IP Networks”, in *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%)
23. Christopher Hollot, Yong Liu, Vishal Misra and Don Towsley, “Unresponsive Flows and AQM Performance”, in *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%)
24. Yong Liu and Weibo Gong, “Challenges to Congestion Control posed by Concurrent Downloads” in *Proceedings of 41st IEEE Conference on Decision and Control (CDC)’02*, Volume 2, Pages 2017-2022, Las Vegas, December 2002
25. Yong Liu and Weibo Gong, “On Fluid Queueing System with Strict Priority”, in *Proceedings of IEEE Conference on Decision and Control (CDC)’01*, Volume 2, Pages 1923-1928, Orlando, December 2001.
26. 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
27. Weibo Gong, Yong Liu, Vishal Misra and Don Towsley, “On the Tails of Web File Size Distributions”, in *Proceedings of 39th Annual Allerton Conference on Communication, Control and Computing*, October 2001.
28. Yong Liu and Weibo Gong, “Perturbation Analysis for Stochastic Fluid Queueing Systems”, in *Proceedings of IEEE Conference on Decision and Control (CDC)’99*, Volume 5, Pages 4440-4445, Phoenix, December 1999.

- **Technical Reports**

1. Yong Liu, Don Towsley, Jing Weng and Dennis L. Goeckel, “An Information Theoretic Approach to Network Trace Compression”, UMass Technical Report.
2. Xiang Yu, Chunming Qiao, Yong Liu and Don Towsley, “Performance Evaluations of TCP Traffic Transmitted over Optical Burst Switching Networks”, SUNY at Buffalo Technical Report.

RESEARCH SPONSORS

- National Science Foundation: “Network X-ities: – Foundations and Applications”, under contract CNS-0519998, 09/2005 - 08/2009, co-PI, collaborating with Prof. Jim Kurose and Don Towsley from UMass, and Prof. Mung Chiang and Jennifer Rexford from Princeton;
- Thomson Corporate Research, Princeton, NJ;
- Verizon Laboratories, Waltham, MA;
- Huawei IP Network Research Laboratories, Nanjing, China;
- Center for Advanced Technology in Telecommunications (CATT) of Polytechnic University;
- New Faculty Start-up Package from Polytechnic University.

TEACHING

- EL736 - Communications Networks II: Design and Algorithms, Fall 2006, Fall 2007;

- EL537 - Internet Architecture and Protocols, Spring 2006, 2007, 2008;
- EL536 - Principles of Communication Networks, Fall 2006, Fall 2007;
- EL933 - Network Measurement and Traffic Engineering, Fall 2005;
- EE136 - Communication Networks, Spring 2007, 2008;

PROFESSIONAL SERVICE

- Publication/Web Chair for 2007 IEEE Workshop on High Performance Switching and Routing (HPSR);
- Technical Program Committee Member for
 - ACM Sigcomm CoNEXT 2008
 - ACM Sigmetrics 2008
 - IEEE ICDCS 2008
 - ACM Sigcomm 2007 P2P-TV Workshop
 - ACM Sigmetrics 2007 Student Workshop
 - IFIP Performance 2007
 - Tridentcom 2007
 - ICCCN 2006, 2007, 2008
- Referee for submissions to the following professional conferences and journals: *IEEE/ACM Transactions on Networking*; *IEEE Journal on Selected Areas in Communications*; *Computer Networks Journal*; *IEEE Transactions on Multimedia*; *IEEE Transactions on Automatic Control*; *Automatica*; *Journal of Discrete Event Dynamic Systems*; ACM Sigcomm, ACM Sigmetrics, IEEE Infocom, IEEE Globecom; IEEE ICC; IEEE CDC.

GRADUATE STUDENTS

- Current Ph.D Students: Le Ba Tan, Chao Liang, Angela Wang (co-advisor);
- Current Master Students: Zujiong Hu, Xu Wang, Fengci Yao;
- Ph.D Proposal/Thesis Committee Served on: Huseyin Akcan (CS), Vassil Kriakov (CS), Rakesh Kumar (EE), Jian Liang (CS), Pei Liu (EE), Huizhong Sun (EE), Yeling Zhang (CS);