Liqun FU

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RESEARCH INTERESTS

- Wireless Communications and Networking
- Resource Allocation
- Green Wireless
- Optimization

EDUCATION

The Chinese University of Hong Kong, Hong Kong

❏ Ph.D., Information Engineering, Aug. 2006 - July 2010
- Thesis title: Scheduling in Wireless Networks with Physical Interference Constraints
- Advisor: Prof. Soung Chang Liew; Co-advisor: Prof. Jianwei Huang

Tsinghua University, Beijing, China

❏ M.S., Electrical Engineering, Sept. 2003 - July 2006
- Thesis title: Study on IEEE 802.16 based Wireless Mesh Networks
- Supervisor: Prof. Zhigang Cao

Xiamen University, Xiamen, China

❏ B.Eng. (Honors), Electrical Engineering, Sept. 1999 - July 2003
- Rank 1st in the department

HONORS AND AWARDS

❏ Global Scholarship for Research Excellence, The Chinese University of Hong Kong, 2009
❏ Award of CUHK Postgraduate Student Grants for Overseas Academic Activities, The Chinese University of Hong Kong, 2008
❏ Postgraduate Full Studentship (Aug. 2006 - July 2009), The Chinese University of Hong Kong
❏ Excellent Graduate Student with Entrance Exam Exemption, Tsinghua University, 2003
❏ Excellent Graduate of Xiamen University, Xiamen University, 2003
❏ First-class Excellent Academic Scholarship (2000-2003), awarded by Xiamen University

RESEARCH AND PROFESSIONAL EXPERIENCE

The Chinese University of Hong Kong, Hong Kong.
❏ Research Assistant, Aug. 2006 - July 2010
- Advisor: Prof. Soung Chang Liew; Co-advisor: Prof. Jianwei Huang
- Design and Optimization of Wireless Networks, specific projects include:
  * Optimal joint scheduling and power control in wireless networks,
  * Fast heuristic algorithm design with guaranteed performance for joint scheduling and power control in wireless networks,
  * Carrier-sensing protocol design to achieve interference-safe transmissions and improve spatial reuse in CSMA networks.

Princeton University, Princeton, New Jersey, USA.
❏ Visiting student research collaborator to CommNet Group, Department of Electrical Engineering, Princeton University, June - Nov. 2009
- Academic host: Prof. Mung Chiang
- Work on Green Wireless Communications, specific projects include:
  * Energy-efficient resource allocation in multi-cell networks,
  * Energy-efficient protocol design in CSMA networks.

Tsinghua University, Beijing, China.
❏ Research Assistant, Sept. 2003 - July 2006
- Advisor: Prof. Zhigang Cao
- Work on IEEE 802.16 based Wireless Mesh Networks, with the specific project:
  * Proposed efficient routing and scheduling algorithms to improve spatial reuse and network throughput of IEEE 802.16 based Wireless Mesh Networks.

PROFESSIONAL ACTIVITIES	❑ Technical Program Committee (TPC) member for the IEEE Global Communications Conference (GLOBECOM) 2010, Miami, Florida, USA. ❑ Reviewer for IEEE Transactions on Wireless Communications, IEEE Journal on Selected Areas in Communications (JSAC), IEEE Transactions on Information Theory, and IEEE Transactions on Communications. ❑ Reviewer for IEEE Conference on Computer Communications (INFOCOM), IEEE Global Communications Conference (GLOBECOM), IEEE International Conference on Communications (ICC), IEEE MASS, IEEE WCNC, IEEE APCC, ACM MSWiM. ❑ IEEE Student Member, Student Member of IEEE Communications Society.
TEACHING ASSISTANT	❑ IEG 4100 (IE): Wireless Communication Systems, Fall 2006 ❑ IEG 3010 (IE): Digital Communications, Spring 2007
SKILLS	❑ Solid knowledge of math, communication systems, queueing networks, and optimization. ❑ Extensive skills in MATLAB, C/C++, Assemble Language. ❑ Proficiency in Latex and Microsoft Office. ❑ Languages: Native in Chinese; Fluent in English.
REFERENCES	❑ Available upon request.

PUBLICATIONS

Journals

1. **Liqun Fu**, Soung Chang Liew, and Jianwei Huang, "Effective Carrier Sensing in CSMA Networks under Cumulative Interference," *submitted to IEEE/ACM Transactions on Networking*.

2. **Liqun Fu**, Soung Chang Liew, and Jianwei Huang, "Power Controlled Scheduling with Consecutive Transmission Constraints: Complexity Analysis and Algorithm Design," *submitted to IEEE/ACM Transactions on Networking*.

3. **Liqun Fu**, Soung Chang Liew, and Jianwei Huang, "Fast Algorithms for Joint Power Control and Scheduling in Wireless Networks," *IEEE Transactions on Wireless Communications*, vol. 9, no. 3, pp. 1186-1197, Mar. 2010.

4. W. Xie, Y. J. Zhang, M. L. Sichitiu, **Liqun Fu**, and Y. Yao, "Feasibility of Optimally Assigning Channels by Exhaustive Search in Commercial Multi-radio Wireless Mesh Networks," *Springer Telecommunication Systems* (Special Issue on Wireless Ad-hoc, Sensor and Mesh Networks), vol. 44, no. 1-2, pp. 171-178, Jun. 2010.

Conference Proceedings

1. **Liqun Fu**, Hongseok Kim, Jianwei Huang, Soung Chang Liew, and Mung Chiang, "Energy Conservation and Interference Mitigation: From Decoupling Property to Win-Win Strategy,"**(invited paper)**, to appear in *49th IEEE CDC (Conference on Decision and Control)*, Atlanta, Georgia, US, Dec. 2010.

2. **Liqun Fu**, Soung Chang Liew, and Jianwei Huang, "Effective Carrier Sensing in CSMA Networks under Cumulative Interference," *in Proc. of IEEE INFOCOM*, San Diego, CA, US, March, 2010.

3. **Liqun Fu**, Soung Chang Liew, and Jianwei Huang, "Power Controlled Scheduling with Consecutive Transmission Constraints: Complexity Analysis and Algorithm Design," *in Proc. of IEEE INFOCOM*, Rio de Janeiro, Brazil, Apr. 2009.

4. Jialiang Zhang, Soung Chang Liew, and **Liqun Fu**, "On Fast Optimal STDMA Scheduling over Fading Wireless Channels," *in Proc. of IEEE INFOCOM*, Rio de Janeiro, Brazil, Apr. 2009.

5. **Liqun Fu**, Soung Chang Liew, and Jianwei Huang, "Joint Power Control and Link Scheduling in Wireless Networks for Throughput Optimization," *in Proc. of IEEE ICC*, Beijing, China, May 2008.

6. **Liqun Fu** and Zhigang Cao, "Joint Optimization of Routing and Scheduling for Higher Throughput in IEEE 802.16 Mesh Networks," *in Proc. of ICWMMN*, 2006.

7. **Liqun Fu**, Zhigang Cao, and Pingyi Fan, "Spatial Reuse in IEEE 802.16 Based Wireless Mesh Networks," *in Proc. of IEEE ISCIT*, 2005.