

Canming Jiang

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RESEARCH AREA

Wireless networking; Network modeling and optimization; Network security

EDUCATION

- *Ph.D., Computer Engineering*, Fall 2007–Spring 2012 (expected)
Virginia Tech, Blacksburg, VA
- *M.S., Computer Science*, June 2007
Chinese Academy of Sciences (CAS), Beijing, China
- *B.E., Electronic Engineering and Information Science*, June 2004
University of Science and Technology of China (USTC), Hefei, China

AWARDS AND HONORS

- IEEE INFOCOM Best Paper Award Runner-UP, 2011
- Excellent Student Scholarship, University of Science and Technology of China, 2000

TECHNICAL SKILLS

- C/C++, Matlab, HTML; Linux, Windows
- Mathematical modeling; Linear/Nonlinear/Integer programming
- In-depth knowledge of TCP/IP and networking technologies
- Good working knowledge of network programming with standard socket APIs
- Familiar with emerging wireless technologies such as MIMO, cognitive radio, OFDMA

RESEARCH EXPERIENCE

- Research Assistant, Dept. of ECE, Virginia Tech, 06/2008–Present
 - Conduct research on throughput optimization for multi-hop wireless ad hoc networks with successive interference cancellation.
 - Conduct research on multiobjective optimization for multi-hop wireless networks.
 - Conduct research on capacity scaling laws for new emerging wireless networks, such as cognitive radio networks and MIMO ad hoc networks.
 - Conduct research on modeling and cross-layer optimization for multi-hop MIMO ad hoc networks.

- Research Assistant, State Key Laboratory of Information Security, Chinese Academy of Sciences, 09/2004–06/2007
 - Conducted research on key agreement and user authentication in wireless sensor networks.
 - Participated in designing and implementing a distributed RSA key generation system under Linux.
- Intern, Hitachi (China) Research and Development Corporation, Beijing, 02/2006–05/2006
 - Made a Linux mobile IPv6 testbed based on MIPL2.0.
 - Reviewed a lot of IETF RFCs and drafts.

JOURNAL PUBLICATIONS

1. C. Jiang, Y. Shi, Y.T. Hou, and S. Kompella, “On the asymptotic capacity of multi-hop MIMO ad hoc networks,” *IEEE Transactions on Wireless Communications*, vol. 10, no. 4, pp. 1032–1037, Apr. 2011.
2. C. Jiang, H. Xu, and B. Li, “Distributed user authentication in wireless sensor networks,” *Journal of the Graduate School of the Chinese Academy of Sciences* (in Chinese), vol. 25, no. 1, pp. 80–85, Jan. 2008.
3. C. Jiang, Y. Shi, Y.T. Hou, and S. Kompella, “Bicriteria optimization in multi-hop wireless networks: Characterizing the throughput-energy envelope,” submitted to *IEEE Transactions on Mobile Computing*.
4. Y. Shi, J. Liu, C. Jiang, C. Gao, and Y.T. Hou, “A tractable and optimal link layer model for multi-hop MIMO networks,” submitted to *IEEE/ACM Transactions on Networking*.

CONFERENCE PUBLICATIONS

1. C. Jiang, Y. Shi, Y.T. Hou, W. Lou, S. Kompella, and S.F. Midkiff, “Toward simple criteria to establish capacity scaling laws for wireless networks,” to appear in *Proceedings of the 31st Annual IEEE International Conference on Computer Communications (IEEE INFOCOM 2012)*, March 25-30, 2012, Orlando, Florida. (Acceptance rate: 278/1547 = 18%)
2. C. Jiang, Y. Shi, Y.T. Hou, W. Lou, S. Kompella, and S.F. Midkiff, “Squeezing the most out of interference: An optimization framework for joint interference exploitation and avoidance,” to appear in *Proceedings of the 31st Annual IEEE International Conference on Computer Communications (IEEE INFOCOM 2012)*, March 25-30, 2012, Orlando, Florida. (Acceptance rate: 278/1547 = 18%)
3. C. Jiang, Y. Shi, Y.T. Hou, and W. Lou, “Cherish every joule: Maximizing throughput with an eye on network-wide energy consumption,” to appear in *Proceedings of the 31st Annual IEEE International Conference on Computer Communications (IEEE INFOCOM 2012)*, March 25-30, 2012, Orlando, Florida. (Acceptance rate: 278/1547 = 18%)
4. C. Jiang, Y. Shi, Y.T. Hou, and S. Kompella, “On optimal throughput-energy curve for multi-hop wireless networks,” in *Proceedings of the 30th Annual IEEE International Conference on Computer Communications (IEEE INFOCOM 2011)*, April 10-15, 2011, Shanghai, China. (Acceptance rate: 291/1823 = 16%)

5. Y. Shi, J. Liu, C. Jiang, C. Gao, and Y.T. Hou, "An optimal MIMO link model for multi-hop wireless networks," in *Proceedings of the 30th Annual IEEE International Conference on Computer Communications (IEEE INFOCOM 2011)*, April 10-15, 2011, Shanghai, China. (Acceptance rate: $291/1823 = 16\%$) **Best Paper Award Runner-UP**
6. Y. Shi, C. Jiang, Y.T. Hou, and S. Kompella, "On capacity scaling law of cognitive radio ad hoc networks (Invited Paper)," in *Proceedings of the 20th International Conference on Computer Communications and Networks (ICCCN 2011)*, July 31 - August 4, 2011, Maui, Hawaii.
7. C. Jiang, B. Li, and H. Xu, "An efficient scheme for user authentication in wireless sensor networks," in *the 21st IEEE International Conference on Advanced Information Networking and Applications (AINA 2007), Workshops Proceedings*, May 21-23, 2007, Niagara Falls, Ontario, Canada.

TEACHING EXPERIENCE

- Teaching Assistant, Dept. of ECE, Virginia Tech
 - ECE2504: Introduction to Computer Engineering, Fall 2007
 - ECE4534: Embedded System Design, Spring 2008

UNITED STATES PATENT

- Y. Shi, J. Liu, C. Gao, C. Jiang, and Y.T. Hou, "An efficient method for interference cancellation and spatial multiplexing in MIMO wireless networks," US Patent Application No. 61/309,902, filed on March 3, 2010.

PROFESSIONAL ACTIVITIES

- Reviewer for
 - IEEE Transactions on Communications
 - IEEE Transactions on Mobile Computing
 - IEEE Transactions on Wireless Communications
 - IEEE Journal on Selected Areas in Communications
 - IEEE Wireless Communications Magazine
 - IEEE Network Magazine
 - Wireless Networks (Springer)
 - Ad Hoc Networks (Elsevier)
 - Many top-tier conferences in wireless networking and communications
- Student member, IEEE Communications Society (since 2008)