Yi Su

University of California, Los Angeles
54-147, Engineering IV Building, 420 Westwood Plaza
Los Angeles, CA 90095, USA
yisu@ee.ucla.edu

Research Interest

Game theoretic solutions for multi-user communications

Distributed optimization and learning in multi-agent systems

Cross-layer optimization in wireless multimedia communications

Physical layer issues on wireless communications

Employment

Senior Engineer, Qualcomm Incorporated, (2010.07 - present)

Education

University of California, Los Angeles, USA (2006.09 – 2010.6)

Doctor of Philosophy, Electrical Engineering, Cumulative GPA: 4.0/4.0
Advisor: Prof. Mihaela van der Schaar
Ranked 1st in 2007 Ph.D. Preliminary Examination in Signals and Systems area
Dissertation: Informationally Efficient Multi-user Communication

Tsinghua University, Beijing, China (2004.09 – 2006.07)

Master of Engineering, Electronic Engineering, Cumulative GPA: 92.4/100, Ranking: 1/179
Advisor: Prof. Shidong Zhou

Tsinghua University, Beijing, China (2000.09 – 2004.07)

Bachelor of Engineering, Electronic Engineering, Cumulative GPA: 89.4/100, Ranking: 9/180

Scholarships, Awards, and Research Grants

2009.10: Emerging Leaders in Multimedia, IBM T. J. Watson Research Center, Hawthorne, NY.
2009.10: Dissertation Year Fellowship, UCLA
2008 10: Continuing Student Fellowship, Electrical Engineering Department, UCLA.
2008.07: US NSF Theoretical Foundations Division funds research for three years on “Knowledge and Strategic Learning in Multi-user Communications” (Contributed to writing the research proposal)
2007.09: University Fellowship, UCLA, in recognition of ranking the first in Signals & Systems Area in PhD Preliminary Examination, Apr. 2007
2006.09: University Fellowship, UCLA
2005.10: Scholarship for Academic Excellence, Tsinghua Univ.
2004.07: The outstanding and distinguished undergraduate student, Tsinghua Univ.
2003.12: Cyrus Tang Scholarship-First Prize, Tsinghua Univ.
2002.12: Scholarship for Academic Excellence, Tsinghua Univ.
2001.12: Scholarship for Academic Excellence, Tsinghua Univ.
2000.09: Excellent Freshman Scholarship, Tsinghua Univ.
2000.07: Ranking the 2nd highest among 100,000 students of Guang Xi province in National College Entrance Exam 2000

Journal Publications

[7] Y. Su and M. van der Schaar, "Linearly Coupled Communication Games", *IEEE Trans. Commun.*, accepted and to appear.

[6] Y. Su and M. van der Schaar, "Dynamic Conjectures in Random Access Networks Using

Bio-inspired Learning," *IEEE Journal on Selected Areas in Communications, Special Issue on Bio-Inspired Networking*, vol. 28, no. 4, pp. 587-601, May 2010.

[5] Y. Su and M. van der Schaar, "Conjectural Equilibrium in Multiuser Power Control Games", *IEEE Transactions on Signal Processing*, vol. 57, no. 9, pp. 3638-3650, Sep. 2009.

[4] Y. Su and M. van der Schaar, "A New Perspective on Multi-user Power Control Games in Interference Channels", *IEEE Transactions on Wireless Communications*, vol. 8, no. 6, pp. 2910-2919, Jun. 2009.

[3] Y. Su and M. van der Schaar, "Minimum Required Learning and Impact of Information Feedback Delay for Cognitive Users", *IEEE Transactions on Vehicular Technology*, vol. 58, no. 6, pp. 2825-2834, Jul. 2009.

[2] Y. Su and M. van der Schaar, "Multi-user Multimedia Resource Allocation over Multi-carrier Wireless Networks", *IEEE Transactions on Signal Processing*, vol. 56, pp. 2102-2116, May 2008.

[1] Y. Su and M. van der Schaar, "A Simple Characterization of Strategic Behaviors in Broadcast Channels", *IEEE Signal Processing Letters*, vol. 15, pp. 37-40, 2008.

Conference Publications

[10] Y. Su and M. van der Schaar, "Additively Coupled Sum Constrained Games," *GameNets 2011*, to appear.

[9] Y. Su and M. van der Schaar, "Linearly Coupled Communication Games", *Proc. of the Allerton Conference on Communication, Control, and Computing*, Sep. 2010.

[8] Y. Su and M. van der Schaar, "Towards Efficient, Stable, and Fair Random Access Networks: A Conjectural Equilibrium Approach", *Proc. of IEEE Globecom 2010*, to appear.

[7] Y. Su and M. van der Schaar, "Conjectural Equilibrium in Water-filling Games", *Proc. of IEEE Globecom*, Dec. 2009.

[6] Y. Su and M. van der Schaar, "From Competition to Coopetition: Stackelberg Equilibrium in Multi-user Power Control Games", *Proc. of Gamenets*, pp. 107-116, May 2009.

[5] Y. Su and M. van der Schaar, "Learning for Cognitive Wireless Users", *Proc. of IEEE Symposia on New Frontiers in Dynamic Spectrum Access Networks (Dyspan)*, pp. 1-5, Oct. 2008.

[4] Y. Su and M. van der Schaar, "How Much Learning is Sufficient for Interference Games?", 1st *IAPR Workshop on Cognitive Information Processing (CIP)*, Jun. 2008.

[3] Y. Su and M. van der Schaar, "Resource Allocation for Multi-user Video Transmission over Multi-carrier Networks", *Proc. of IEEE Int. Conf. Commun. (ICC).* pp. 4138-4143, May 2008.

[2] Y. Su and M. van der Schaar, "A New Look at Multi-user Power Control Games", *Proc. of IEEE Int. Conf. Commun. (ICC)*, pp. 1072-1076, May 2008.

[1] Y. Su and S. Zhou, "Performance Estimation of P State Coherent Binary CPM Receiver Based on Laurent Decomposition", *Proc. of IEEE WCNM 2005*, pp.573-578, Sep. 2005.

Invited Talks

- "Linearly coupled communication games", UCLA EE Annual Research Review, Feb. 2010.
- "Conjectural Equilibrium in Water-filling Games", IEEE Globecom, Honolulu, Dec. 2009.
- "Towards Efficient, Stable, and Fair Random Access Networks: A Conjectural Equilibrium Approach", INFORMS Annual Meeting, San Diego, Oct. 2009.
- "Towards Efficient, Stable, and Fair Random Access Networks: A Conjectural Equilibrium Approach", IBM Watson Research Center, Hawthorne, Oct. 2009.
- "Linearly Coupled Communication Games", SoCal NEGT Symposium, Los Angeles, Oct. 2009.
- "New Perspectives on Multi-user Communications", Qualcomm, Santa Clara, Sep. 2009.
- "New Perspectives on Multi-user Communications", Microsoft Research, Seattle, Apr. 2009.
- "New Perspectives on Multi-user Communications", Cisco, Santa Barbara, Feb. 2009.

- "Learning for Cognitive Wireless Users", IEEE Dyspan, Chicago, Oct. 2008.
- "Resource Allocation for Multi-user Video Transmission over Multi-carrier Networks", IEEE ICC, Beijing, May 2008.
- "A New Look at Multi-user Power Control Games", IEEE ICC, Beijing, May 2008.
- "A New Perspective on Multi-user Power Control Games in Interference Channels", UCLA EE Annual Research Review, Feb. 2008.
- "Performance Estimation of P State Coherent Binary CPM Receiver Based on Laurent Decomposition", IEEE WCNM, Sep. 2005 .

Research Experiences and Activities

Technical reviewer,

IEEE Trans. Signal Processing
IEEE Journal on Selected Areas in Communications
IEEE Trans. Wireless Communications
IEEE Trans. Vehicular Technology
IEEE Trans. Circuits and Systems for Video Technology
IEEE Trans. Multimedia
IEEE Signal Processing Letters
IEEE Sensors Journal
EURASIP Journal on Wireless Communications and Networking
IEEE ICC, IEEE WCNC, IEEE PIMRC, IEEE WCNIS

06/2009–09/2009: Qualcomm Corporation, 3165 Kifer Rd, Santa Clara, CA, 95051
Summer Intern - Qualcomm CDMA Technology Systems Engineer
Investigated the throughput optimization in multi-input multi-output (MIMO) High Speed Downlink Packet Access (HSDPA) and designed the first channel quality indicator (CQI) based scheduling algorithm that is optimized for the optimal maximum likelihood (ML) symbol detector

Fall 2006–Spring 2010: Media Communications and Systems Lab, Dept. EE, UCLA
Graduate Research Assistant
Dissertation Topic: Informational Efficient Multi-user Communication
Researched on the performance of the multi-user communication scenarios where heterogeneous users with different levels of knowledge availability and strategic learning ability coexist

Summer 2005–Summer 2006: Microwave & Digital Communications Lab, Dept. EE, Tsinghua Univ.
Research and Implementation of Distributed Wireless Communication System
M.S. thesis project, program supported by the National Natural Science Foundation of China
Developed the system architecture and designed practical schemes for distributed MIMO system

Autumn 2004: Microwave and Digital Communications Lab, Dept. EE, Tsinghua Univ.
Implementation of Continuous Phase Modulation Radio System
Designed and implemented the key parts of demodulation unit, including timing synchronization, carrier synchronization, and Viterbi decoding.

Spring 2004: Microwave and Digital Communications Lab, Dept. EE, Tsinghua Univ.
Simulation and Design of Direst Sequence Spread Spectrum (DSSS) Communication System
Researched on the architecture and designed implementation schemes for DSSS system

Winter 2003: Dept. EE, Tsinghua Univ.
Design and Implementation of Wireless Communication System in ISM Band
Led a team to develop SOC design via a single-chip radio transceiver (nRF2401) for 2.4-2.5GHz ISM