

YAN (LINDSAY) SUN

Associate Professor

Department of Electrical, Computer, and Biomedical Engineering
University of Rhode Island, Kingston, RI 02881

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Education

Ph.D., Department of Electrical and Computer Engineering, University of Maryland, College Park, Maryland, August 2004.

M.S., Department of Electrical and Computer Engineering, University of Maryland, College Park, Maryland, May 2003.

B.S., Department of Electronics, Peking University, Beijing, China, June 1998.

Research Interests

Trustworthy Social Computing, Trust and Reputation Management in Distributed Computing Systems, Power Grid Security, Information and Network Security.

Awards and Honors

- ♦ Best Paper Award, for the paper entitled “Anomaly Detection in Feedback-based Reputation Systems through Temporal and Correlation Analysis”, IEEE International Conference on Social Computing (SocialCom) 2010.
- ♦ NSF Faculty Early Career Development (CAREER) Award, February 2007.
- ♦ WISE Fellowship, for attending Women’s Institute in Summer Enrichment (WISE) program at the University of California, Berkeley, June 2007.
- ♦ NSF Travel Award for participating IEEE INFOCOM’04 in Hong Kong, March 2004.
- ♦ Graduate School Fellowship, University of Maryland, 1998-2000.

Research Experiences

Associate Professor, July 2010 - present

Department of Electrical, Computer and Biomedical Engineering, University of Rhode Island

Research Areas:

- ♦ Power Grid Security
- ♦ Trustworthy Social Computing
- ♦ Trustworthy Biomedical Systems

Assistant Professor, July 2006 – July 2010

Department of Electrical, Computer and Biomedical Engineering, University of Rhode Island

Research Areas:

- ♦ Information and Network Security
- ♦ Trust Establishment and Reputation Systems
- ♦ Trustworthy Social Computing
- ♦ Trustworthy Biomedical Systems

NSF Advance Assistant Professor, August 2004 - July 2006

Department of Electrical, Computer and Biomedical Engineering, University of Rhode Island

Selected Research Topics:

- ◆ Security in Mobile Ad hoc Networks and Wireless Sensor Networks
- ◆ Quantitative Trust Modeling and Evaluation
- ◆ Energy Efficiency in Sensor Networks

Research Assistant, May 2001 - July 2004

Communication and Signal Processing Lab, the Institute for Systems Research

University of Maryland, College Park, Maryland

Selected Research Topics:

- ◆ Access Control for Group Communications.
- ◆ Multimedia Transmission over Broadband Wireless LAN.
- ◆ Transmit Diversity Techniques for Wireless Multicast.

Teaching Experiences***Curriculum Development, for URI Cyber Security and Forensics Center***

Together with Dr. Lisa Dipippo and Dr. Victor Faye Wolf, developing and revising courses according to the requirements from National Security Agency (NSA). The goal is to obtain NSA certificate for *National Centers of Academic Excellence in Information Assurance Education*. The application package has been submitted in August 2011.

Curriculum Development, University of Rhode Island

Developed a new undergraduate course: ELE438-Information and Network Security;
Developing a new graduate level special topic course on cyber security

Teaching, University of Rhode Island

ELE438 – Information and Network Security, Spring 2007, 2008, 2009, 2010, 2011, 2012

ELE437 – Computer Communications, Fall 2008, 2009, 2010, 2011, 2012

ELE492/ELE594 – Information and Network Security, Spring 2005

ELE491 – Information and Network Security, Spring 2006

ELE305 – Introduction to Computer Architecture, Fall 2006, 2007

Research-oriented Advising

Yongbo Zeng, PhD student (2012-present)

Yihai Zhu, PhD student (2011-present)

Yuhong Liu, PhD (2007-2012, graduated in August 2012)

Wenkai Wang, PhD (2007-2011, graduated in December 2011)

Yafei Yang, PhD (2004-2008, graduated in December 2008.)

Greg Fellow, MS student (2006-2007, graduated in May 2007)

Nitish Reddy Busannagari, MS student (2009-2010)

Javier Escayola, exchange student (2005)

Robert Power, Undergraduate (2005-2006)

Westley Laquerre, Undergraduate (2004)

Co-advising: Xuan Li, PhD student (2007-present, expected to graduate in August 2012)

Co-advising: Qinyuan Feng, PhD student, Primary institution: Peking University (2007-present)

Co-advising: Gema Vinales, exchange student from Spain (2007-2008)

Professional Activities

- ◆ Elected member of Information and Forensics and Security Technical Committee, IEEE Signal Processing Society, Term: 01/01/2012 – 12/31/2014.
- ◆ Associate Editor, IEEE Signal Processing Magazine, since 2010.
- ◆ Workshop/Conference Chair or Organizers
 - *Finance Chair*, 2012 IEEE International Workshop on Multimedia Signal Processing (MMSP 2012), 2012.
 - *Organizing Member*, Summer School on Social Media Processing, Sydney, Australia. Sponsored by IEEE Signal Processing Society, 2012.
 - *Co-Chair*, Track of Trust, Reputation, Evidence and other Collaboration Know-how (TRECK), the 25th ACM Symposium on Applied Computing (ACM SAC'10), Sierre, Switzerland, March 2010.
 - *Publication Chair*, Fourth Annual Boston Area Architecture Workshop (BARC), February. 2006.
 - *Local Arrangement Chair*, IEEE International Workshop on Genomic Signal Processing and Statistics (Gensips), 2005.
- ◆ Technical Program Committees

Social Infomatics'12	- 2012 ASE/IEEE International Conference on Social Informatics
SocialCom'12	- ASE/IEEE International Conference on Social Computing
WIFS'12	- IEEE International Workshop on Information Forensics and Security
ACM SAC TRECK'12	- Track of Trust, Reputation, Evidence and other Collaboration Know-how (TRECK), the 27th ACM Symposium on Applied Computing
INFOCOM'11	- IEEE, the 30th Conference on Computer Communications
GLOBECOM'11	- The 53rd Annual IEEE Global Communications Conference
INFOCOM'10	- IEEE, the 29th Conference on Computer Communications
UC-SEC'09	- The 2009 International Workshop on Ubiquitous Computing Security
INFOCOM'09	- IEEE, the 28th Conference on Computer Communications
ICCCN'09	- The 18th International Conference on Computer Communications and Networks, Network Security and Privacy Track
GLOBECOM'09	- The 51st Annual IEEE Global Communications Conference
TRAM'08	- IEEE ICDCS Workshop, 2 nd International Workshop on Trust and Reputation Management in Massively Distributed Computing Systems
SPEUCS'07	- ACM Workshop on Security for Emerging Ubiquitous Wireless Networks
GLOBECOM'07	- The 50th Annual IEEE Global Communication Conference
MSN'06	- The 2 nd Int. Conference on Mobile Ad-hoc and Sensor Networks
CHINACOM'06	- The 1 st Int. Conference on Communications and Networking in China
GLOBECOM'05	- The 48th Annual IEEE Global Communication Conference
BROADNET'05	- Broadband Wireless Networking Symposium

- ◆ Guest Editor
 - Special Issue on Privacy and Trust Management in Cloud and Distributed Systems, IEEE Transactions on Information Forensics and Security, 2012
 - Special Issue on Signal and Information Processing for Social Learning and Networking, IEEE Signal Processing Magazine, 2011.
 - Special Issue on Wireless Network Security, Wiley's Journal of Wireless Communications and Mobile Computing, May 2005.
- ◆ Proposal Review
 - NSF CISE Review Panel, March 2007.
 - Reviewer for US Army research office, April 2005.
 - Reviewer for Maryland Industrial Partnerships Program (MIPS), October, 2005.
- ◆ Referee for Journals
 - IEEE Transactions on Information Forensics and Security, 2012
 - IEEE Signal Processing Magazine, 2011
 - IEEE Journal of Selected Topics in Signal Processing, 2010
 - IEEE Signal Processing Letters, 2009
 - EURASIP Journal on Wireless Communications and Networking, 2009
 - IEEE Transactions on Mobile Computing, 2009
 - Wireless Networks, The Journal of Mobile Communication, Computation and Information, 2009
 - IEEE/ACM Transactions on Networking, 2008
 - IEEE Transactions on Information Forensics and Security, 2007, 2009
 - IEEE Transactions on Fuzzy Systems, 2008
 - IEEE Transactions on Wireless Communications, 2004 - 2008
 - IEEE Communication Magazine, 2004-2007
 - IEEE Multimedia, 2005
 - IEEE Journal on Selected Areas in Communications, 2004, 2007, 2011
 - IEEE Transactions on Multimedia, 2002
 - EURASIP Journal on Wireless Communications and Networking, 2007
 - Wiley's International Journal of Communication Systems, 2008
 - International Journal of Security and Networks (IJSN), 2005
 - International Journal of Computers and Applications, 2003

Tutorials, Invited Talks and Panels

Tutorials:

- ◆ “Multimedia Social Networks: Behavior Dynamics, Security, and Beyond”, given together with Dr. H.V. Zhao at 2010 IEEE International Conferences on Acoustics, Speech and Signal Processing (ICASSP 2010), March 2010.
- ◆ “Tutorial on Wireless Multicast Security”, Network/Computer Security Workshop 2006, Lehigh University, May 2006.

Panel:

- ◆ “Security and Privacy for Emerging Wireless Networks”, Research Review Day at WINLAB, Rutgers University, NJ, May 22, 2007.

Invited Talks:

- ◆ “*Anomaly Detection in Online Reputation Systems*”, at the First Young Investigator Conference (EITC-YIC 2011), Harvard University, Aug 2011.
- ◆ “*Understanding Cascading Failures in the U.S. Power Grid*”, Cybersecurity Symposium, University of Rhode Island, April 2011.
- ◆ “*Keeping Online Ratings Honest*”, Brown University, December 2010.
- ◆ “*Defending Online Reputation Systems against Collaborative Unfair Raters*”, University of Delaware, October 2009.
- ◆ “*Defending Online Reputation Systems against Collaborative Unfair Raters through Signal Modeling and Trust*”, University of Massachusetts Lowell, October 2009.
- ◆ “*Trust Establishment: Theories and Applications*”, University of Connecticut, March 2008.
- ◆ “*Formalizing Trust in Mobile Wireless Networks*”, Research Review Day at WINLAB (Wireless Information Network Laboratory), Rutgers University, May 22, 2007.
- ◆ “*Trust Modeling and Evaluation in Distributed Networks*”, IEEE Providence Sector, April 19, 2007.
- ◆ “*Trust Establishment in Distributed Networks: Vulnerability and Defense*”, University of Massachusetts Dartmouth, February 2007
- ◆ “*Trust Model in Ad hoc networks*”, 19th IEEE Annual Computer Communications Workshop, Bonita Springs, FL, October 2004.
- ◆ “*Securing Group Dynamic Membership Information over Multicast*”, HKUST Networking Workshop, Hong Kong University of Science and Technology, Hong Kong, March 2004.

Affiliations

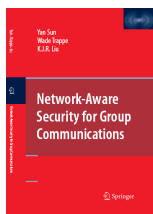
Member, Institute of Electrical and Electronics Engineers (IEEE)

Member, Association for Computing Machinery (ACM)

Member, IEEE Women in Engineering

Publications

[Book]



Yan Sun, Wade Trappe, K. J. Ray Liu, “*Network-Aware Security for Group Communications*”, ISBN 978-0-387-68846-6, Springer, Oct. 2007.

[Refereed Book Chapters]

Yan Sun and Zhu Han, “*Trusted Cooperative Transmission: Turn a Security Weakness into Security Enhancement*”, in *Securing Wireless Communications at the Physical Layer*, Eds, Wade Trappe and Ruoheng Liu, ISBN 978-1-4419-1384-5, Springer, 2010.

[Refereed Journal Articles]Published & Accepted:

1. Zhou Yuan, Zhu Han, Yan Sun, Husheng Li and Jubin Song, "Routing-Toward-Primary-User Attack and Belief Propagation Based Defense in Cognitive Radio Networks", *IEEE Transactions on Mobile Computing*, Accepted in May 2012.
2. Yan Sun and Yuhong Liu, "Security of Online Reputation Systems: Evolution of Attacks and Defenses", *IEEE Signal Processing Magazine*, Vol. 29. No. 2, pp.87-97, March 2012.
3. Akhilesh Shrestha, L. Xing, Yan Sun, and Vinod M. Vokkarane, "Infrastructure Communication Reliability of Wireless Sensor Networks Considering Common-Cause Failures," *International Journal of Performability Engineering*, special issue on Dependability of Wireless Systems and Networks, Vol. 8, No. 2, pp. 141-150, March 2012.
4. Chaonan Wang*, L. Xing, Vinod Vokkarane, and Yan Sun, "Reliability of Wireless Sensor Networks with Tree Topology," *International Journal of Performability Engineering*, Vol. 8, No. 2, pp. 213-216, March 2012.
5. Makeyev O., Liu X., Luna-Munguía H., Rogel-Salazar G., Mucio-Ramirez S., Liu Y., Sun Y., Kay S., Besio W., "Toward a noninvasive automatic seizure control system in rats with transcranial focal stimulations via tripolar concentric ring electrodes", *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, (Accepted).
6. Makeyev O., Liu X., Luna-Munguía H., Rogel-Salazar G., Mucio-Ramirez S., Liu Y., Sun Y., Hadidi R., Kay S., Besio W., "Toward an automatic seizure control system in rats through transcranial focal stimulation via tripolar concentric ring electrodes", *Epilepsy Currents*, Vol. 12, Issue s1, January/February 2012, pp. 29-30.
7. Xiaorong Zhang, Yuhong Liu, Fan Zhang, Jin Ren, Yan Sun, Qing Yang, and Huang He, "On Design and Implementation of Neural-Machine Interface for Artificial Legs", accepted, *IEEE Transactions on Industrial Informatics*, 2012.
8. He Huang, Fan Zhang, Yan Sun and Haibo He, "Design of a Robust EMG Sensing Interface for Pattern Classification", *Journal of Neural Engineering*, Vol. 7, No. 5, 2010.
9. Qinyuan Feng, Yan Sun, Ling Liu, Yafei Yang; Yafei Dai, "Voting Systems with Trust Mechanisms in Cyberspace: Vulnerabilities and Defenses", *IEEE Transactions on Knowledge & Data Engineering*, Vol. 22, No. 12, pp. 1766-1780, December 2010.
10. Wenkai Wang, Husheng Li, Yan Sun, and Zhu Han, "Securing Collaborative Spectrum Sensing against Untrustworthy Secondary Users in Cognitive Radio Networks", *EURASIP Journal on Advances in Signal Processing*, vol. 2010, Article ID 695750, 2010
11. L. Xing, P. Boddu, Yan Sun, and W. Wang, "Reliability Analysis of Static and Dynamic Fault-Tolerant Systems subject to Probabilistic Common-Cause Failures, Proc IMechE, Part O: *Journal of Risk and Reliability*, Vol. 224, No. 1, pp.43-53, 2010
12. Yafei Yang, Yan Sun, Steven Kay, and Qing Yang, "Securing Rating Aggregation Systems using Statistical Detectors and Trust", *IEEE Transactions on Information Forensics and Security*, vol. 4, no. 4, pp.883-898, Dec. 2009.
13. Zhu Han and Yan Sun, "Distributed Cooperative Transmission with Unreliable and Distrustful Relay Channels", *EURASIP Journal on Wireless Communications and Networking*, EURASIP Vol. 2009, Article ID 740912, 2009
14. Yafei Yang, Qinyuan Feng, Yan Sun and Yafei Dai, "Dishonest Behaviors in Online Rating Systems: Cyber Competition, Attack Models and Attack Generator", *Journal of Computer Science Technology, Special Issues on Trust and Reputation Management in Future Computing Systems and Applications*, vol. 24, no. 5, pp. 855-865, September 2009.

15. Yan Sun, Zhu Han, and K. J. Ray Liu, "Defense of Trust Management Vulnerabilities in Distributed Networks", *IEEE Communications Magazine, Feature Topic on Security in Mobile Ad Hoc and Sensor Networks*, vol. 46, no. 2, pp.112-119, February 2008.
16. Yan Sun, and K. J. Ray Liu, "Hierarchical Group Access Control for Secure Multicast Communications", *IEEE/ACM Transactions on Networking*, vol. 15, no. 6, pp.1514-1526, December 2007.
17. Yan Sun and K. J. Ray Liu, "Analysis and Protection of Dynamic Membership Information for Group Key Distribution Schemes", *IEEE Transactions on Information Forensics and Security*, vol. 2, no. 2, pp.213-226, June 2007.
18. Wei Yu, Yan Sun, and K. J. Ray Liu, "Optimizing Rekeying Cost for Contributory Group Key Agreement Schemes", *IEEE Transactions on Dependable and Secure Computing*, vol. 4, no. 3, pp.228-242, July-September 2007.
19. Yan Sun, Wei Yu, Zhu Han, and K. J. Ray Liu, "Information Theoretic Framework of Trust Modeling and Evaluation for Ad Hoc Networks", *IEEE Journal on Selected Areas in Communications*, vol. 24, no. 2, pp.305- 317, Feb. 2006.
20. Y. Mao, Yan Sun, Min Wu, and K. J. Ray Liu, "JET: Dynamic Joint-Exist-Tree Amortization and Scheduling for Contributory Key Agreement", *IEEE/ACM Transactions on Networking*, vol. 14, no. 5, pp.1128-1140, Oct. 2006.
21. Charles Pandana, Yan Sun and K. J. Ray Liu, "Channel-Aware Priority Transmission Scheme using Joint Channel Estimation and Data Loading over OFDM Systems", *IEEE Transactions on Signal Processing*, vol. 53, no. 8, pp.3297-3310, August 2005.
22. Yan Sun, Wade Trappe, and K. J. Ray Liu, "A Scalable Multicast Key Management Scheme for Heterogeneous Wireless Networks", vol. 12, no. 4, pp.653-666, *IEEE/ACM Transactions on Networking*, August 2004.

Under Review:

[Refereed Conference Papers]

Published & Accepted:

Topic: Trust and Reputation Systems; Security and Privacy

1. Wenkai Wang, Yan (Lindsay) Sun, and Haibo He, "Topological Analysis of Cascading Failures in Bay Area Power Grid", in proc. *2012 IEEE PES General Meeting*, 22 - 26 July 2012, San Diego, CA, USA.
2. Haibo He, Jun Yan, Yida Yang, and Yan Sun, "Evaluating complex network vulnerability using self-organizing map", *16th International Conference on Cognitive and Neural Systems (ICCNNS)*, May-June, 2012.
3. Jun Yan, Yida Yang, Wenkai Wang, Haibo He, Yan Sun, "An Integrated Visualization Approach for Smart Grid Attacks", *International Conference on Intelligent Control and Information Processing (ICICIP 2012)*, Dalian, China, July 2012.
4. Yuhong Liu and Yan Sun, "Detecting Cheating Behaviors in Cyber Competitions by Constructing Competition Social Network", Poster Track, *IEEE Intl. Workshop on Information Forensics and Security (WIFS'11)*, Brazil, Nov. 29th-Dec. 2nd, 2011.

5. Yuhong Liu, Yan Sun, Ting Yu, “Defending Multiple-user-multiple-target Attacks in Online Reputation Systems”, in *proc. the Third IEEE International Conference on Social Computing (Socialcom’11, acceptance rate 10%)*, Oct. 9-11, 2011, Boston, U.S.A
6. Yuhong Liu, Fan Zhang, Yan (Lindsay) Sun, He Huang, “Trust Sensor Interface for Improving Reliability of EMG-based User Intent Recognition”, in *proc. the 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC’11)*, Boston, MA, Aug-Sept, 2011.
7. W.G. Besio, X. Liu, Y. Liu, Y.L. Sun, A.V. Medvedev, and K. Koka, “Algorithm for Automatic Detection of Pentylentetrazole-Induced Seizures in Rat”, in *proc. the 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC’11)*, Boston, MA, Aug-Sept, 2011.
8. H. Huang, Y. Sun, Q. Yang, F. Zhang, X Zhang, Y. Liu, J. Ren, F. Sierra, “Integrating neuromuscular and cyber systems for neural control of artificial legs”, in *Proceeding of First ACM/IEEE International Conference on Cyber-Physical Systems*, Stockholm, Sweden, pp. 129-138, 2010.
9. Qinyuan Feng, Ling Liu, Yan Lindsay Sun, Ting Yu, Yafei Dai, “Enhancing Personalized Ranking Quality through Multidimensional Modeling of Inter-item Competition”, in *Proc. 6th International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom2010)*, October 2010.
10. Yuhong Liu and Yan Lindsay Sun, “Anomaly Detection in Feedback-based Reputation Systems through Temporal and Correlation Analysis”, in *Proc. IEEE International Conference on Social Computing (SocialCom2010, acceptance rate 11%)*, **Best Paper Award**, August 2010.
11. Qinyuan Feng, Yu Wu, Yan Lindsay Sun, Jing Jiang, Yafei Dai, “User Behavior Modeling in Peer-to-Peer File Sharing Networks: Dissecting Download and Removal Actions”, in *Proc. 34th International Conference on Acoustics, Speech, and Signal Processing (ICASSP’09)*, 2009.
12. Weijun Xiao, He Huang, Yan Sun, and Qing Yang, “Promise of Embedded System with GPU in Artificial Leg Control: Enabling Time-frequency Feature Extraction from Electromyography”, the *31st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS)*, September 2009.
13. Yuhong Liu, Yafei Yang, and Yan Lindsay Sun, “Detection of Collusion Behaviors in Online Reputation Systems”, in *Proc. Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, October 2008
14. Yafei Yang, Yan Sun, Steven Kay, and Qing Yang, “Defending Online Reputation Systems against Collaborative Unfair Raters through Signal Modeling and Trust”, in *Proc. 24th ACM Symposium on Applied Computing (ACM SAC’09)*, Honolulu, HI, March 8 - 12 2009.
15. Yafei Yang, Qinyuan Feng, Yan Sun and Yafei Dai, “Reputation Trap: An Powerful Attack on Reputation System of File Sharing P2P Environment”, in *Proc. 4th International Conference on Security and Privacy in Communication Networks (SecureComm’08, acceptance ratio 20%)*, Istanbul, Turkey, September 2008.
16. Qinyuan Feng, Yafei Yang, Yan Sun, and Yafei Dai, “Modeling Attack Behaviors in Rating Systems (invited paper)”, in *Proc. ICDCS Workshop, 2nd International Workshop on Trust and Reputation Management in Massively Distributed Computing Systems (IEEE TRAM’08)*, Beijing, China, July 2008.
17. Yafei Yang, Yan Sun, Jin Ren and Qing Yang, “Building Trust in Online Rating Systems through Signal Modeling”, in *Proc. ICDCS Workshop, 1st International Workshop on Trust and*

Reputation Management in Massively Distributed Computing Systems (IEEE TRAM'07), Toronto, Canada, June 2007.

18. Yan Sun and Yafei Yang, "Trust Establishment in Distributed Networks: Analysis and Modeling", in Proc. *IEEE International Conference on Communications (ICC'07)*, Glasgow, Scotland, June 2007.
19. Yan Sun, Zhu Han, Wei Yu, and K. J. Ray Liu, "A Trust Evaluation Framework in Distributed Networks: Vulnerability Analysis and Defense against Attacks", in Proc. *IEEE INFOCOM'06*, (18% acceptance ratio), Barcelona, April 2006.
20. Yan Sun, Zhu Han, Wei Yu and K.J. Ray Liu, "Attacks on Trust Evaluation in Distributed Networks", in Proc. *IEEE 40th Annual Conference on Information Science and Systems (CISS'06)*, Princeton, NJ, March 2006.
21. Yan Sun, Wei Yu, Zhu Han, and K. J. Ray Liu, "Trust Modeling and Evaluation in Ad hoc Networks", in Proc. *IEEE Global Communication Conference (Globecom'05)*, St. Louis, MO, November-December 2005.

Topic: Wireless Communications and Networking; Security

22. Amir Ehsani Zonouz*, Liudong Xing, Vinod M. Vokkarane, and Yan (Lindsay) Sun, "K-coverage Reliability Evaluation for Wireless Sensor Networks," *The 18th ISSAT International Conference on Reliability and Quality*, Boston, MA, July 2012.
23. Chaonan Wang*, L. Xing, Vinod M. Vokkarane, and Yan Sun, "Manycase and Anycast-Based Infrastructure Communication Reliability for Wireless Sensor Networks," *The 18th ISSAT International Conference on Reliability and Quality*, Boston, MA, July 2012.
24. Chaonan Wang*, L. Xing, Vinod M. Vokkarane, and Yan Sun, "Reliability Analysis of Wireless Sensor Networks using Different Network Topology Characteristics," *International Conference on Quality, Reliability, Risk, Maintenance, and Safety Engineering (QR2MSE2012)*, Chengdu, China, June 2012 (accepted).
25. Wenkai Wang, Qian Cai, Yan Sun, and Haibo He, "Risk-aware Attacks and Catastrophic Cascading Failures in U.S. Power Grid", to appear, in Proc. *IEEE Global Communication Conference (Globecom'11)*, Houston TX, December 2011.
26. Wenkai Wang, Yan Sun, Husheng Li, and Zhu Han, "Cross-Layer Attack and Defense in Cognitive Radio Networks", in Proc. *IEEE Global Communication Conference (Globecom'10)*, Miami, FL, December 2010.
27. Wenkai Wang, Husheng Li, Yan Sun, Zhu Han, "CatchIt: Detect Malicious Nodes in Collaborative Spectrum Sensing", in Proc. *IEEE Global Communication Conference (Globecom'09)*, Honolulu, HI, November-December 2009.
28. Wenkai Wang, Husheng Li, Yan Sun, and Zhu Han, "Attack-Proof Collaborative Spectrum Sensing in Cognitive Radio Networks", in Proc. *43rd Annual Conference on Information Science and Systems (CISS'09)*, Baltimore MD, March 2009.
29. Liudong Xing, Prashanthi Boddu, and Yan Sun, "System Reliability Analysis Considering Fatal and Non-Fatal Shocks", in Proc. *55th Annual Reliability & Maintainability Symposium*, Fort Worth, TX, January 2009.
30. Yafei Yang and Yan Sun, "Securing Time-synchronization Protocols in Sensor Networks: Attack Detection and Self-healing", in Proc. *IEEE Global Communication Conference (Globecom'08)*, New Orleans, LA, November-December 2008.

31. Zhu Han and Yan Sun, "Wave Cooperative Transmission Protocol for Underwater Acoustic Communications", in Proc. *IEEE International Conference on Communications (ICC'08)*, Beijing China, May 2008.
32. Zhu Han and Yan Sun, "Self-Learning Cooperative Transmission-Coping with Unreliability due to Mobility, Channel Estimation Errors, and Untrustworthy Nodes", in Proc. *IEEE Global Communication Conference (Globecom'07)*, Washington DC, December 2007.
33. Zhu Han and Yan Sun, "Securing Cooperative Transmission in Wireless Communications", in Proc. *1st ACM Workshop on Security for Emerging Ubiquitous Wireless Networks*, Philadelphia, PA, August 2007.
34. Yafei Yang and Yan Sun, "PETO: Power-Efficient Transmission with Outsourcing in Wireless Sensor Networks", in Proc. *IEEE Global Communication Conference (Globecom'06)*, San Francisco, CA, December 2006.
35. Weijun Xiao, Yan Sun, Yinan Liu, and Qing Yang, "TEA: Transmission Error Approximation for Distance Estimation between Two Zigbee Devices", in Proc. *International Workshop on Networking, Architecture and Storage (IWNAS'06)*, Shengyang, China, August 2006.
36. Wei Yu, Yan Sun, and K.J. Ray Liu, "HADOF: Defense against Routing Disruptions in Mobile Ad Hoc Networks", in Proc. *IEEE INFOCOM'05*, (17% acceptance ratio), Miami, FL, March 2005.
37. Yan Sun, and K. J. Ray Liu, "Transmit Diversity Techniques for Multicasting over Wireless Networks", in Proc. *IEEE Wireless Communications and Networking Conference (WCNC'04)*, Atlanta, GA, March 2004.
38. C. Pandana, Yan Sun, and K.J. Ray Liu, "Channel Aware Unequal Error Protection for Image Transmission over Broadband Wireless LAN", in Proc. *IEEE Int. Conf. on Image Processing (ICIP'03)*, Barcelona, Spain, September 2003.
39. Yan Sun, and K. J. Ray Liu, "Multi-layer Management for Secure Multimedia Multicast Communications", in Proc. *IEEE International Conferences on Multimedia and Expo (ICME'03)*, Vol II, pp 205-208, Baltimore, MD, July 2003.
40. Yan Sun, C. Pandana, Xiaowen Wang, and K.J. Ray Liu, "A Joint Channel Estimation and Unequal Error Protection Scheme for Image Transmission in Wireless OFDM Systems", in Proc. *IEEE International Workshop on Multimedia Signal Processing (MMSP'02)*, St. Thomas, US Virgin Islands, Dec. 2002.
41. Yan Sun, Xiaowen Wang, K.J. Ray Liu, "A Joint Channel Estimation and Unequal Error Protection Scheme for Video Transmission in OFDM Systems", in Proc. *IEEE Int. Conf. on Image Processing (ICIP'02)*, Vol1, pp 549-552, Rochester, NY, Sep. 2002.

Topic: Key Management and Secure Group Communications

42. Wei Yu, Yan Sun, and K. J. Ray Liu, "Minimization of Rekeying Cost for Contributory Group Communications", in Proc. *IEEE Global Communication Conference (Globecom'05)*, St. Louis, MO, November-December 2005.
43. Yan Sun, and K. J. Ray Liu, "Securing Dynamic Membership Information in Multicast Communications", in Proc. *IEEE INFOCOM'04* (18% acceptance ratio), Hong Kong, March 2004.

44. Yan Sun, and K. J. Ray Liu, “Scalable Hierarchical Access Control in Secure Group Communications”, in Proc. *IEEE INFOCOM’04* (18% acceptance ratio), Hong Kong, March 2004.
45. Yinian Mao, Yan Sun, Min Wu and K. J. Ray Liu, “Dynamic Join and Exit Amortization and Scheduling for Time-Efficient Group Key Agreement”, in Proc. *IEEE INFOCOM’04* (18% acceptance ratio), Hong Kong, March 2004.
46. Yan Sun, and K.J. Ray Liu, “Securing Dynamic Group Membership Information over Multicast: Attacks and Immunization”, in Proc. *IEEE Global Communication Conference (Globecom’03)*, San Francisco, CA, December 2003.
47. Yan Sun, Wade Trappe, and K.J. Ray Liu, “Topology-aware Key Management Schemes for Wireless Multicast”, in Proc. *IEEE Global Communication Conference (Globecom’03)*, San Francisco, CA, December 2003.
48. Yan Sun, Wade Trappe, and K.J. Ray Liu, “An Efficient Key management Scheme for Secure Wireless Multicast”, in Proc. *IEEE Int. Conf. on Communication (ICC’02)*, pp 1236 -1240 vol 2, New York City, NY, May 2002.
49. Bin Sun, Wade Trappe, Yan Sun, and K.J. Ray Liu, “A Time-efficient Contributory Key Agreement Scheme for Secure Group Communications”, in Proc. *IEEE Int. Conf. on Communication (ICC’02)*, pp 1159 -1163 vol 2, New York City, NY, May 2002.

Under Review:

- Yihai Zhu, Yan (Lindsay) Sun, and Haibo He, "Feature Vector Based Attack Strategies against Power Grid Systems", *IEEE GLOBECOM 2012*, Submitted.
- Yuhong Liu, Fan Zhang, Yan (Lindsay) Sun, and He Huang, “Reliability Evaluation for EMG-based User Intent Recognition System A Trust-based Solution”, *34th Annual International IEEE EMBS Conference of the IEEE Engineering in Medicine and Biology Society*, Submitted.
- Amir Ehsani Zonouz , Liudong Xing, Vinod M. Vokkarane, Yan Sun “Application Communication Reliability of Wireless Sensor Networks Supporting K-coverage”, *IEEE GLOBECOM 2012*, Submitted.

Patent

1. US Patent (Pending), “Methods for defense against collaborative, profit-driven manipulations in online rating systems”, with Yafei Yang, Qing (Ken) Yang and Steven Kay, filed in May 2008.
2. US Patent (Pending) “APS: Method and Apparatus for Approximate Positioning System in Personal Area Networks Using Zigbee”, with Qing(Ken) Yang, Weijun Xiao and Yinan Liu, filed in April 2006.