

Curriculum Vitae – Min Chen

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Short Bio:

Min Chen received the Ph.D degree in Electrical Engineering from South China University of Technology in 2004, when he was 23 years old. Since Mar. 2006, he is Post-Doctoral Fellow in Department of Electrical and Computer Engineering at University of British Columbia. Before joining UBC, he has been a Post-Doctoral Fellow in School of Computer Science and Engineering at Seoul National University for one and half years.

He was interviewed by Chinese Canadian Times where he appeared on the celebrity column in 2007. He is the author of a textbook *OPNET Network Simulation* (Tsinghua Univ. Press, 2004). Dr. Chen received the *Best Paper Runner-up Award* from The Fifth International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness (QShine) 2008.

Research Areas:

Dr. Chen's research interests include algorithmic, optimization and performance issues in wireless ad hoc and sensor networks and multimedia communications over wireless networks.

Academic Qualifications:

- B.S in Electrical Engineering, South China University of Technology, 1999
- M.S in Electrical Engineering, South China University of Technology, 2001
- PhD in Electrical Engineering, South China University of Technology, 2004

Professional Experience:

- Mar/09-present, Research Associate in Dept. of Computer Science, University of British Columbia, Vancouver, Canada
- Mar/06-Feb/09, Post-doctoral Fellow in Dept. of Electrical and Computer Engineering, University of British Columbia, Vancouver, Canada
- Oct/04-Feb/06, Post-doctoral Fellow in Computer Science&Engineering, Seoul National University, Seoul, Korea
- Oct/03-Mar/04, Technical support of OPNET for Meridian company, Beijing, China.
- Apr/04-Aug/04, Technical support of QualNet for Super Instruments company, Beijing, China.

Teaching:

- 07/02-01/03, "Digital Signal Processing" for undergraduates (Grade2000-Class3) in Department of Computer Science, South China Normal University.
- 07/02-01/03, "Communication Theory" for undergraduates (Grade2000-Class3) in Department of Computer Science, South China Normal University.

Publications:

Book

Min Chen, "OPNET Network Simulation", (in Chinese), *Press of Tsinghua University*, April 2004, ISBN 7-302-08232-4, 352 pages. (120 citations)

Book Chapter

Yong Yuan, **Min Chen**, "Cross Layer Design for Wireless Sensor Networks with Virtual MIMO ", in *Distributed Antenna Systems: Open Architecture for Future Wireless Communications*, Y. Zhang, J. Luo, and H. Hu (Editors), New York, NY: Auerbach Publications, CRC Press, Taylor and Francis Group, 2006.

M. Chen, S. Mao, Y. Yuan, "Real time Video Transmission over Wireless Sensor Networks", in *Broadband Mobile Multimedia, Techniques and Applications*, Y. Zhang, et. al. (Editors), New York, NY: Auerbach Publications, CRC Press, Taylor and Francis Group, 2007.

Min Chen, S. Mao, V.C.M. Leung "Cooperative Geographical Routing in Wireless Sensor Networks", edited by Profs. Yang Xiao, Hui Chen, and Frank H. Li, to be published by World Scientific Publishing Co., 2009.

Journal Publications

1. **Min Chen**, S. Gonzalez and V.C.M. Leung, "Applications and Design Issues of Mobile Agents in Wireless Sensor Networks ", *IEEE Wireless Communications Magazine*, Vol. 14, No. 6, pp. 20- 26, Dec. 2007.
2. **Min Chen**, Victor C.M. Leung, S. Mao, "Directional Controlled Fusion in Wireless Sensor Networks," invited paper to special issue in *ACM/Springer Mobile Networks and Applications (MONET)*
3. **Min Chen**, V.C.M. Leung, S. Mao, Y. Yuan, "DGR: Directional Geographical Routing for Real-Time Video Communications in Wireless Sensor Networks", *Computer Communications*, Special Issue On Concurrent Multipath Transfer, vol. 30, no. 17, pp. 3368–3383, Nov. 30, 2007
4. **Min Chen**, Shiwen Mao, Yang Xiao, Ming Li and Victor C. M. Leung, "IPSF: A novel framework for integrating IP and sensor networks," *International Journal of Sensor Networks*, vol.5, no.1, 2009.
5. **Min Chen**, V.C.M. Leung, S. Mao and T. Kwon, " RLRR: Receiver-oriented Load-balancing and Reliable Routing in in Wireless Sensor Networks", *Wireless Communications and Mobile Computing Journal (WCMC)*, Special Issue on Distributed Systems of Sensors and Applications, 2007. DOI: 10.1002/wcm.543
6. **Min Chen**, Taekyoung Kwon, Shiwen Mao, Yong Yuan, and Victor C. M. Leung, "Reliable and energy-efficient routing protocol in dense wireless sensor networks," *International Journal of Sensor Networks*, Special Issue on Energy-Efficient Algorithm and Protocol Design in Sensor Networks, vol.4, no.1/2, pp.104-117, 2008.
7. **Min Chen**, Taekyoung Kwon, Shiwen Mao, and Victor C.M. Leung, "Spatio temporal relation-based energy-efficient reliable routing protocol in wireless sensor networks," *International Journal of Sensor Networks*, Special Issue On Interdisciplinary Design of Algorithms and Protocols in Wireless Sensor Networks, vol.5, no.2, 2009.
8. **Min Chen**, Xiaodan Wang, V.C.M. Leung, Y. Yuan, "VCR: Virtual Coordinates Routing in Wireless Sensor Networks", in *Sensor Letters*, Vol.4, pp.325-330, 2006.
9. **Min Chen**, T. Kwon, Y. Yuan, Y. Choi, and V.C.M. Leung, "MADD: Mobile-agent-based Directed Diffusion in Wireless Sensor Networks", in *EURASIP Journal on Applied Signal Processing*, Special Issue On Visual Sensor Network, 2007.
10. **Min Chen**, T. Kwon, Y. Yuan, V.C.M. Leung, "MAWSN: Mobile Agent Based Wireless Sensor Networks", *Journal of Computers*, vol. 1, no. 1, pp. 14-21, April 2006.
11. **Min Chen**, T. Kwon, and Y. Choi, "EDDD: Energy-efficient Differentiated Directed Diffusion (EDDD) for Real-Time Traffic in Wireless Sensor Networks", *Elsevier Computer Communications*, Special Issue On Dependable Sensor Network, Vol. 29, No.2 , pp. 231-245, Jan. 2006.
12. **Min Chen**, Gang Wei, "Multi-Stages Hybrid ARQ with Conditional Frame Skipping and Reference Frame Selecting Scheme for Real-Time Video Transport Over Wireless LAN," *IEEE Transaction on Consumer Electronics*, pp158-pp167, Vol. 50, No.1, Feb, 2004.
13. Y. Hua, **Min Chen**, and G. Wei, "Distribution of the PAR in DMT systems," *IEE Electronics Letters*, Apr. 20, 2003.
14. Yong Yuan and **Min Chen**, "Mixture Integer Programming Based Optimal Transmission Policy Design for Multiple Applications in Wireless Sensor Networks", *Journal of Sensor Letters*, Vol.4, pp.266-274, 2006.
15. Y. Yuan, Z. He, and **Min Chen**, "Virtual MIMO-based Cross Layer Design for Wireless Sensor Networks," *IEEE Transactions on Vehicular Technology*, No.3, Vol 53, May 2006.
16. Y. Yuan, Z. Yang, **Min Chen** and J. He "A Survey on Information Processing Technologies in Wireless Sensor Networks", *International Journal of Ad hoc and Ubiquitous Computing*, Vol. 1 No. 3, pp. 103-109, 2006.

17. Y. Yuan and **Min Chen**, and T. Kwon "A Novel Cluster Based Cooperative MIMO Scheme for Multi-hop Wireless Sensor Networks", in *EURASIP Journal on Wireless Communications and Networking*, 2007.
18. M. Li, J. Harris, **Min Chen**, S. Mao, Yang Xiao, W. Read, B. Prabhakaran, "Architecture and Protocol Design for A Pervasive Robot Swarm Communication Networks," *Wireless Communications and Mobile Computing Journal (WCMC)*, Special Issue on Wireless Monitoring and Control, 2009.
19. X. Liang, **Min Chen**, Yang Xiao, I. Balasingham and Victor Leung, "MRL-CC: A Novel Cooperative Communication Protocol for QoS Provisioning in Wireless Sensor Networks," (Invited Paper to SI) *International Journal on Sensor Networks (IJSNet)*, 2009.
20. **Min Chen**, X. Zhu, "A Novel Differentiated Services Mechanism for Real-time Traffic Transmission in Wireless Sensor Networks", *Chinese Journal of Computer Science* (to appear) (In Chinese)
21. **Min Chen**, X. Zhu, "A Novel Integration of Wireless Sensor Networks and Internet", *Computer Engineering* (to appear) (In Chinese)
22. Yong Yuan, **Min Chen**, "An Energy Management Scheme for Wireless Sensor Network in the Presence of Multiple Applications", *Chinese Journal of Computer* (to appear) (In Chinese)
23. **Min Chen**, Gang Wei, "A novel scheduling algorithm for Real-time VBR video transmission over IP DiffServ Networks", *Computer Research and Development*, May.2004 .
24. **Min Chen**, Gang Wei, "OPNET IEEE 802.11 WLAN Model and Performance Test", *Computer Engineering*, Nov.2004 (In Chinese)
25. **Min Chen**, Zhang JinWen, Gang Wei, "OPNET Radio Model", *Computer Engineering and Application*, Sep. 2003 (In Chinese)
26. **Min Chen**, Zhu XiaoSong, Gang Wei, "A network model fitting MPEG-4 video transmission over IP Differentiated Services", *Computer Engineering and Application*, Aug. 2003 (In Chinese)
27. Zhu XiaoSong, **Min Chen**, Yu YinLin, "Efficient reference frames selection and intra refreshment algorithms for Robust real-time transmission of video over WLAN", *Electronic Information*, July.2004 (In Chinese)
28. Xiaosong Zhu, **Min Chen**, Yinglin Yu, "Video Transmission over IP DiffeServ Networks", *Computer Engineering and Application*, Dec. 2003 (In Chinese)
29. Xiaosong Zhu, **Min Chen**, Yinglin Yu, "A Novel Hybrid ARQ with Conditional Frames Skipped Algorithm for Real-Time Video Transmission", *Computer Engineering and Application*, Nov. 2003 (In Chinese)
30. Yu Weiyu, **Min Chen**, Yu Yinglin, "A novel approach for reconstructing of an image from its edge image," *Journal of South China University of Technology*, Aug.2002 (In Chinese)
31. Yang Qunsheng, Min Chen, Yu Yinglin, "The Image Noise Removal Based on Fuzzy Technique," *Magazine of Electronics*, Aug. 2000
32. Yang Qunsheng, **Min Chen**, Yu Yinglin, "The Random Noise Removal of the Corrupted Image Based on Fuzzy Technique," *Journal of South China University of Technology*, Aug.2000 (In Chinese)
33. Yang Qunsheng, **Min Chen**, Yu Yinglin, "Fuzzy Associative Memories Associated Weight Matrix Neural Networks Learning Algorithm Based on a Class of T-Norm Operations," *System Engineering and Electronic Technology*, Sep. 2001 (In Chinese)
34. Shaojun Yang, **Min Chen**, "Study and Simulation of QoS-based Routing for Wireless Sensor Networks", *Chinese Journal of Sensors and Actuators*, 2005 Vol.18 No.3 P.454-459. (In Chinese)

International Conference

35. **Min Chen**, V. Leung, S. Mao, Ming Li and Imrich Chlamtac, "Energy-efficient Itinerary Planning for Mobile Agents in Wireless Sensor Networks" , in *Proc. IEEE ICC 2009*, Dresden, Germany, June 14-18, 2009
36. **Min Chen**, X. Liang, V. Leung, I. Balasingham, "Multi-Hop Mesh Cooperative Structure based Data Dissemination for Wireless Sensor Networks", in *Proc. IEEE ICACT 2009*, Phoenix Park, Korea, Feb. 15-17, 2009
37. **Min Chen**, V.C.M. Leung and S. Mao, "Directed Controlled Fusion in Wireless Sensor Networks (Invited Paper)", Runner-up Best Paper Award in *Proc. ICST QShine 2008*, HongKong, Sep. 28-31th, 2008.
38. **Min Chen**, V.C.M. Leung, S. Mao and M. Li, " + Cross-layer and Path Priority Scheduling based Real-time Video Communications over Wireless Sensor Networks", in *Proc. IEEE VTC 2008*,

- Marina Bay, Singapore, May. 11-14th, 2008.
39. **Min Chen**, Taekyoung Kwon, and Yanghee Choi, "Data Dissemination based on Mobile Agent in Wireless Sensor Networks", *IEEE LCN2005*, Sydney, Australia, Nov. 2005.
 40. **Min Chen**, Gang Wei, "Scheduling Algorithm for Real-time VBR Video Streams Using Weighted Switch Deficit Round Robin," *IEEE LCN 2003*, Bonn, Germany, October 2003.
 41. **Min Chen**, Gang Wei, "A Novel Hybrid ARQ Algorithm for Real-Time Video Transport Over Wireless LAN," in Proc. *IEEE PIMRC 2003*, Beijing, China, September 2003.
 42. **Min Chen**, Gang Wei, Xiaosong Zhu, "An IP DiffServ Framework For Real-time Video Transmission," *ICCT 2003*, Beijing, China, Mar.2003.
 43. Xiaosong Zhu, **Min Chen**, Yinglin Yu, "Video Transmission Based On DIFFSERV Over IP Networks," *ICCT 2003*, Beijing, China, Mar.2003.
 44. W. Ji, Y. Chen, **Min Chen** and Y. Kang, "Unequal Error Protection based on Objective Video Evaluation Model", in Proc. *ACM Mobimedia 2007*, Nafpaktos, Greece, Aug. 2007.
 45. M. Li, K. Lu, H. Zhu, **Min Chen**, S. Mao, B. Prabhakaran, "Robot Swarm Communication Networks: Architectures, Protocols, and Application", in Proceedings of *Chinacom 2008*, Hangzhou, P.R. China, Aug. 2008.
 46. S. González, **Min Chen** and Victor Leung, "Design, Implementation and Case Study of WISEMAN: Wireless Sensors Employing Mobile AgeNts", *ICST Mobilware'09*, Berlin, Germany, Apr 28-30, 2009
 47. X. Liang, **Min Chen**, Yang Xiao, I. Balasingham and Victor Leung, "A Novel Cooperative Communication Protocol for QoS Provisioning in Wireless Sensor Networks," *ICST Workshop on PCSI'09*, Washington DC, USA, April 2009

Project:

- 09/08-02/09, "Wireless Body Area Sensor Networks", Dept. of Electrical and Computer Engineering, University of British Columbia
- 05/08-02/09, "Video Sensor Networking", Dept. of Electrical and Computer Engineering, University of British Columbia
- 03/06-02/09, "Wireless Sensor Networks", Dept. of Electrical and Computer Engineering, University of British Columbia
- 09/04-02/06, "Energy Efficient Networking Design in Wireless Sensor Network", School of Computer Science and Engineering, Seoul National University.
- 11/02-10/03, Implemented "Tactical Radio Internet Communication System" for GuangZhou Communication Institute.
- 01/03-06/04, Implemented "Cooperative Combat (Army, Navy and Air-force) Communication Simulation System" for GuangZhou Communication Institute.
- 01/04-06/04, Participated in the research and development of "JTIDS (Joint Tactical Information Distributed System) Network Simulation System" in Chinese Military Research Institute.
- 01/04-06/04, Participated in the research and development of "Modeling and Simulation of Satellite Communication System Using OPNET" in Chinese Military Research Institute.
- 01/04-06/04, Participated in the research and development of "Modeling and Simulation of Wide Band Military Network System Using OPNET" in Chinese Military Research Institute.
- 7/01-9/02, Implemented "Mobile IP System Simulation" for the jointed project sponsored by my supervisor Gang Wei and Fujitsu co. of Japan.

Professional Service:

- 2009 International Workshop on Advanced Sensor Integration Technology (ASIT 2009): TPC Chair <http://www.ece.ubc.ca/~minchen/asit2009.htm>
- PCSI 2009: TPC Co-chair <http://zimmer.csufresno.edu/~mingli/pcsi09/>
- IEEE VTC 2008: Session Chair
- ICST QShine 2008: Session Chairs
- ICST Trientcom 2009: Session Chair
- IEEE ICC 2009: Session Chair
- ICST Information Technologies Committee: Committee Member

- WRECOM 2007, ICCCN 2008, CHINACOM 2008, WONGEN 2008: Technical Program Committee
- Guest Editor:
International Journal of Sensor Network (IJSNET), Special Issue on "Recent Advance on Sensor Integration"
- Reviewers
Journal: IEEE Transactions on Computers (TC), IEEE Transactions on Wireless Communications (TWireless), IEEE Transactions on Vehicular Technology (TVT), IEEE Communication Letters (CL), ACM Wireless Networks (WINET), Elsevier Computer Communications (COMCOM), Wiley Journal of Wireless Communications and Mobile Computing (WCMC), Inderscience International Journal of Sensor Networks (IJSNET), EURASIP Journal on Wireless Communications and Networking (EURASIP JWCN).

Invited Talk:

- Department of ECE, University of British Columbia: Applications and Design Issues in Mobile Agents based Sensor Networks (2007-Mar-9)
- Department of ECE, University of British Columbia: Object-oriented RFID System (2008-Mar-9)
- Department of Computing, The Hong Kong Polytechnic University: Intelligent Video Surveillance Sensor System (2008-May-16)
- Department of Computing, The Hong Kong Polytechnic University: Directional Controlled Fusion (2008-July-29)
- School of Computer Science and Engineering, Seoul National University: RFID System for Airport (2009-Feb-19)
- Department of ECE, University of British Columbia: Multi-Hop Mesh Cooperative (MMC) Structure Based Data Dissemination for Wireless Sensor Networks (2009-Mar-6)

Awards and Honors:

- Recommended for admission to South China University of Technology (SCUT) without University Entrance Exam in 1996
- Ranked in top 52 among 2000 candidates so as to be selected to become a member of Electronic United Class in SCUT, GuangZhou, China, 1996
- Outstanding Undergraduate Student Scholarship of SCUT from 1996 to 1999
- Finished four years' undergraduate learning program in three years therefore recommended for admission to start Master's program one year earlier than normal in 1999.
- Outstanding Postgraduate Freshman Scholarship of SCUT in 1999
- Outstanding Postgraduate Student Scholarship of SCUT from 2000 to 2003
- Ranked first in annual SCUT ballroom dancing competition in 2003
- Ranked first among 40 Ph.D candidates in terms of integrated grade in Electronic Engineering, SCUT, 2003
- Selected in the Formation Dance Team of 2006/2007, University of British Columbia, April 2006
- Formation Dance Team Silver Medal in Snow Ball on Feb. 9th, 2007
- Best Paper Runner-up Award from The Fifth International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness (QShine) 2008.

Miscellaneous:

- Taekwondo Black Belt
- Interviewed by CCTimes (Chinese Canadian Times).
- Performance in The Same Song (by CCTV), on Feb. 12th, in Queen Elizabeth Theatre, Vancouver.
- Performance in Asian Center, UBC, on Mar. 8th, 2007.