

WONSOO KIM

Wireless Networking and Communications Group
Department of Electrical and Computer Engineering
The University of Texas at Austin
Austin, TX 78712-1084

Phone: 512-589-2203
E-mail: wkim@ece.utexas.edu
<http://www.ece.utexas.edu/~wkim/>

OBJECTIVE

Software/System Engineer in the area of wireless communications and networking

SKILLS

Programming languages	C/C++, Python, Java (3 months), Verilog (3 months)
Development platforms	Unix/Linux, Window, uCOS, SDL, X-kernel, Click Modular, GNU Radio
Simulation/Math packages	MATLAB, OPNET Modeler, LABVIEW
Synopsys tool	Cadence (3 months)
Network protocols	DOCSIS, Wireless LAN (IEEE 802.11a/b/e/g/n, HIPERLAN), Wireless PAN (IEEE 802.15.1/3/4), WiMAX (IEEE 802.16), LTE
Processor	ARM7

EDUCATION

09/2005 - Present	The University of Texas at Austin Ph.D. Candidate in Electrical and Computer Engineering Wireless Networking and Communications Group Research Area: Cross-layer design, Wireless MAC/PHY protocol design and implementation, Software-defined radio Advisor: Prof. Scott M. Nettles G.P.A.: 3.57/4.0	Austin, TX
03/2001 - 02/2003	Korea University M.S.E, Radio Science and Engineering Thesis: Design and Analysis of QoS Guaranteed MAC Protocol over Broadband Wireless LAN Advisor: Prof. Chung Gu Kang G.P.A.: 3.94 /4.5	Seoul, Korea
03/1994 - 02/2001	Korea University B.S.E., Radio Science and Engineering	Seoul, Korea

APPLICABLE COURSES

Communication and Networking	Communication Network:Tech/Arch/Protocol, Data Communication, Advanced Network system, Analysis and Design of Communication Networks, Wireless and Mobile networking, Communication Theory, Digital Communication, Information Theory, Advanced Wireless: Mod/Multiple Access, Wireless Communication LAB, Space-time Communication
Signal Processing	Linear system, Digital signal processing, Signal & Systems
Etc	Computer Language LAB, Advanced Algorithms, Random Processes, Stochastic Processes Detection and Estimation, Applied stochastic processes, VLSI-I

WORKING EXPERIENCE

02/2003 - 02/2004, **Samsung Advanced Institute of Technology (SAIT)** Yongin, Korea
12/2004 - 06/2005

Full-time Research & Development Engineer
Project: IEEE 802.15.4 LR-WPAN One-Chip Solution
- Designed IEEE 802.15.4 (ZigBee) MAC architecture
- Verified IEEE 802.15.4 MAC protocol using SDL (Specification Description Language)
- Implemented IEEE 802.15.4 MAC on uCOS

01/1997 – 03/1999 **Republic of Korea Army Logistics Command** Busan, Korea
Administrative Specialist

ACTIVITIES

2008, 2009 Reviewer of EURASIP Journal on Wireless Communications and Networking
06/2003-06/2005 Committee Member of ZigBee Alliance
- Network and Interoperability Working Group

TEACHING EXPERIENCES

Spring 2009 EE382N: Communication Networks:Tech/Arch/Protocol (Dr. Scott M. Nettles)
Fall 2008/2009
Spring 2008 EE464: Senior Design project (Dr. Womack Baxter)
Fall 2005 EE380K: Introduction to System Theory (Dr. Aristotle Arapostathis)
Fall 2002 Probability & Random Process (Dr. Chung Gu Kang)

PROJECTS

09/2005 - Present **Hydra: A Wireless Multi-hop Testbed**
- Goal: Design and Experiments of Cross-layer protocols over Multi-hop networks by using Click modular router and GNU radio platform
- Implemented OFDM PHY, OFDMA PHY, 802.11 MAC, 802.11n MAC, and Rate-control MAC protocol for multi-antenna systems
- Designed/Implemented a rate-adaptive frame aggregation scheme for IEEE 802.11n MIMO-OFDM PHY.
- Designed/Implemented a frame aggregation scheme supporting multi-destination and multi-rate.

HONORS AND AWARDS

09/2005 - 08/2007 Korea Science and Engineering Foundation Fellowship, KOSEF, Korea
01/2004 Value of Customer Prize, Samsung Advanced Institute of Technology, Korea
04/2003 Best Paper Award, JCCI 2003, Korea
03/2001 - 02/2003 BK (Brain Korea) scholarship, Korea

PUBLICATIONS

Journal:

1. **Won Soo Kim** et al., "Design and Analysis of Distributed MAC protocol for Integrated Services over IEEE 802.11-based Ad-Hoc Wireless LAN," *The journal of the Korean Institute of Communication Science*, Nov. 2003.
2. **Won Soo Kim** et al., "A Seamless Coordinator Switching (SCS) Scheme for Wireless Personal Area Network," *IEEE Transaction on Consumer Electronics*, Aug. 2003.

Conference:

1. **Wonsoo Kim**, M. O. Khan, K. T. Truong, S.-H. Choi, R. Grant, H. K. Wright, K. Mandke, R. C. Daniels, R. W. Heath, Jr. and S. M. Nettles, "An Experimental Evaluation for Rate Adaptation for Multi-Antenna Systems," *IEEE INFOCOM 2009*, Apr. 2009.
2. **Wonsoo Kim**, H. K. Wright and S. M. Nettles, "Improving the Performance of Multi-hop Wireless Networks using Frame Aggregation and Broadcast for TCP ACKs," *ACM CoNEXT 2008*, Dec. 2008.
3. Ketan Mandke, S. Choi, G. Kim, R. Grant, R. Daniel and **Wonsoo Kim** et al., "Early Results on Hydra: A Rapid SDR Prototyping Platform," *VTC 2007 spring*, Apr. 2007.
4. Il Whan Kim, **Won Soo Kim** et al., "Fast MARCH: A Medium Access Control Protocol for Multi-hop Wireless Ad-hoc Networks," *CIC 2003*, Oct. 2003.
5. **Won Soo Kim** and Ki-Soo Chang, "Technology and Market analysis of ZigBee system," *EIC 2003*, Oct. 2003.
6. **Won Soo Kim** et al., "A Seamless Coordinator Switching (SCS) Scheme for Wireless Personal Area Network," *ICCE 2003*, Jun. 2003.
7. **Won Soo Kim** et al., "Non-uniform Polling Scheme with Activity Detection for Real-Time Services in Wireless LAN," *VTC 2003 spring*, Apr. 2003.
8. **Won Soo Kim** et al., "Design and Analysis of Distributed MAC protocol for Integrated Services over IEEE 802.11-based Ad-Hoc Wireless LAN," *JCCI 2003*, Apr. 2003.
9. **Won Soo Kim** et al., "Distributed MAC protocol with Service Differentiation over IEEE 802.11-based Ad-Hoc Wireless LAN," *APCC 2002*, Sep. 2002.
10. **Won Soo Kim** et al., "Non-uniform Polling Scheme for Real-Time Services in Frame-based WLAN," *ITRC Forum 2002*, May 2002.

Patents:

1. **Won Soo Kim**, Min-Seoup Jung, "Wireless Access Mechanism in high node-density environments" Korea Patent/ US, Europe, China and Japan Patent pending
2. **Won Soo Kim**, "The Methodology for linking networks over InerPAN framework" Korea Patent/ US, Europe, China and Japan Patent pending
3. **Won Soo Kim**, "Efficient Broadcast Scheme in ZigBee system" US, Europe, China, Japan and Korea Patent
4. Il Whan Kim, **Won Soo Kim** et al., "Fast-MARCH: A Medium Access Control Protocol for Multi-hop Wireless Ad-hoc Networks" US, Europe, China, Japan and Korea Patent
5. **Won Soo Kim**, "A Seamless Coordinator Switching (SCS) Scheme for Wireless Personal Area Network" Korea Patent/ US, Europe, China and Japan Patent pending
6. **Won Soo Kim** et al., "Distributed MAC protocol with Service Differentiation over IEEE 802.11-based Ad-Hoc Wireless LAN," Korea Patent

VISA STATUS

F-1 Student, South Korea