

CURRICULUM VITAE

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Education

1996.3 ~ 2000.3 Ph.D. Dept. of EEE (Electrical and Electronics Engineering), Pohang University of Science and Technology (POSTECH), Korea.
1994.3 ~ 1996.2 M.S. Dept. of EEE, POSTECH, Korea.
1990.3 ~ 1994.2 B.S. Dept. of EEE, POSTECH, Korea.

Professional Experience

2014.3 ~ Full Professor, Dept. of Information and Communication Engineering, Yeungnam University, Korea.
2009.3 ~ 2014.2 Associate Professor, Dept. of Information and Communication Engineering, Yeungnam University, Korea.
2008.9 ~ 2009.8 Visiting Professor, Oregon State University, USA.
2005.3 ~ 2009.2 Assistant Professor, School of EECS (Electrical Engineering and Computer Science), Yeungnam University, Korea.
2003.3 ~ 2005.2 Full-time Lecturer, School of EECS, Yeungnam University, Korea.
2002.10 ~ 2002.12 Visiting Researcher, CCSR, University of Surrey, United Kingdom.
2000.3 ~ 2003.2 Senior Researcher, ETRI (Electronics and Telecommunications Research Institute), Korea.

Research Group Experience

2003.3 ~ Principal director of BWC (Broadband Wireless Communications) Laboratory at Yeungnam University, performed 12 funded research projects with the sponsors including ETRI, Korea, MKE (Ministry of Knowledge and Economy), Korea and KRF, Korea.

Research Interests

- Transmission and detection for MIMO systems.
- Multiple access scheme for broadband wireless systems.
- Cooperative transmission systems.
- OFDM, OFDMA and multicarrier transmission algorithms.

Awards and Honors

- Best Paper Award (Eun Jong Kwan Award), 2007 Joint Conference on Communications and Informations, Korea Information and Communications Society.
- Best Lecture Portfolio Award, 2010, Yeungnam University.
- IEEE Senior member since April 2011.
- Best Lecturer Award, 2011, Yeungnam University.

Academic Experience

- 2006 ~ Present, Editor, The Journal of The Korea Society of Space Technology.
- TPC member, ICTC (International Conference on ICT Convergence) 2013.
- TPC member, ICTC (International Conference on ICT Convergence) 2011.
- TPC member, ICTC (International Conference on ICT Convergence) 2010.

International Journal Papers

1. B. Kim and K. Choi, "FADAC-OFDM: Frequency Asynchronous Distributed Alamouti-Coded OFDM," accepted for publication in *IEEE Transactions on Vehicular Technology*, 2014.
2. Y. Kim, P. Shang, S. Kim and K. Choi, "A Simple Soft Linear Detection for Coded multi-input multi-output systems," *Wireless Communications and Mobile Computing*, vol. 13, no. 18, pp. 1612-1620, Dec. 2013.
3. K. Choi, "Semi-analytic selection of sub-carrier allocation schemes in uplink orthogonal frequency division multiple access," *IET communications*, vol. 7, no. 14, pp. 1532-1539, 2013.
4. G. Choi, B. On, K. Choi and S. Yi, "PTL: PRAM Translation Layer," *Microprocessors and Microsystems*, vol. 34, no. 1, pp. 24-31, Feb. 2013.
5. H. Liu, K. Choi and W. Liu, "Computationally Efficient Lattice Reduction Aided Detection for MIMO-OFDM Systems under Correlated Fading Channels," *ETRI Journal*. vol. 34, no. 4, pp. 503-510, Aug. 2012.
6. K. Choi and H. Liu, "Polyphase Scrambled Walsh Codes for Zero-Correlation Zone Extension in QS-CDMA," *IEEE Communications Letters*, vol. 16, no. 4, pp. 429-431, Apr. 2012.
7. H. Kim and K. Choi, "Block-mode lattice reduction for MIMO detection," *ETRI Journal*. vol. 34, no. 1, pp. 110-113, Feb. 2012.
8. K. Choi, "Inter-carrier Interference-Free Alamouti Coded OFDM for Cooperative Systems with Frequency Offsets in Nonselective Fading Environments," *IET Communications*, vol. 5, issue 15, pp. 2125-2129, Oct. 2011.
9. K. Choi, S.Y. Nam and G.S. Choi, "Joint power rate allocation for minimum mean transmission delay in cellular CDMA downlink," *IET Communications*, vol. 5, issue 11, pp. 1530-1539, July 2011.
10. B. Kim and K. Choi, "Adaptive tree search algorithm based on path metric ratio for MIMO systems," *IEICE Transactions on Communications*, vol. E94-B, no. 4, pp. 997-1005, Apr. 2011.
11. K. Choi and H. Liu, "Power allocation for distributed transmit diversity with feedback loop delay," *IEEE Transactions on Communications*, vol. 59, no. 1, pp. 52-58, Jan. 2011.
12. K. Choi and H. Liu, "Quasi-synchronous CDMA using properly scrambled Walsh codes as user-spreading sequences," *IEEE Transactions on Vehicular Technology*, vol. 59, no. 7, pp. 3609-3617, Sep. 2010.
13. K. Choi, "Pilot overhead reduction in turbo coded OFDM systems employing an iterative channel estimation under low signal-to-noise ratio environments," *IET Communications*, vol. 4, issue 3, pp. 312-321, Feb. 2010
14. K. Choi and J. Jin, "Optimum and Suboptimum Code Allocation for Peak Power Reduction in MC CDMA," *IEICE Transactions on Communications*, vol. E59-B, no. 11, pp. 3389-3393 Nov. 2009.
15. K. Choi, "Residual frequency compensation-embedded turbo decoder," *IEEE Transactions on Vehicular Technology*, vol. 57, no. 5, July. 2008.
16. K. Choi and K. Cheun, "Optimum parameters for maximum throughput of FHMA system with multilevel FSK," *IEEE Transactions on Vehicular Technology*, vol. 5, pp. 1485-1492, Sep. 2006.
17. A. Fayziyev and K. Choi, "Iterative decoding-based phase estimation for OFDM systems at low operating SNR," *Lecture Notes in Computer Science*, vol. 4096, pp. 924-934, Aug. 2006.
18. K. Choi, P. Kim, D. Oh and H. Lee, "Iterative frequency and phase compensation under very low SNR," *Technical Report of IEICE*, SAT 105(322), pp.155-159, Oct. 2005.
19. J. Park, and K. Choi, "Guaranteed cost control of uncertain nonlinear neutral systems via memory state feedback," *Chaos Solitons & Fractals*, vol. 24, pp. 183-190, No. 1, Apr. 2005.
20. K. Choi, and J. Lee, "Phase discontinuity-free sampling timing control for IF sampling receiver," *IEEE Signal Processing Letters* vol. 11, No. 10, pp. 810-812, Oct. 2004.
21. K. Choi, J. Park, and Y. Chae, "Throughput-delay performance of interference level-adaptive transmission in voice / data integrated CDMA network with variable spreading gain," *IEE Proceedings-Communications*, vol. 151, No. 3, pp. 217-220, Jun. 2004.
22. K. Choi, and K. Cheun, "Maximum throughput of FHSS Multiple access networks using MFSK modulation," *IEEE Transactions on Communications*, vol. 52, No. 3, pp. 426-434, Mar. 2004.
23. K. Choi, K. Kang and S. Kim, "Peak power reduction scheme based on subcarrier scrambling for MC-CDMA systems," *IEE Proceedings-Communications*, vol. 151, no. 1, Feb. 2004.
24. K. Choi, "Error probability of Q-ary symbol consisting of multiple channel symbols under Rayleigh fading," *IEEE Communications Letters*, vol. 8, No. 1, pp. 48-50, Jan. 2004.
25. K. Choi, and S. Kim, "Optimum uplink power / rate control for minimum delay in CDMA networks," *ETRI Journal*, vol. 25, No. 6, pp. 437-444, Dec. 2003.
26. K. Choi and S. Kim, "Optimum power/rate allocation for minimum delay in CDMA downlink," *Lecture Notes in Computer Science*, vol. 2524, pp. 294-303, Feb. 2003.
27. K. Lim, K. Choi, S. Kim, and K. Kang "A Satellite Radio Interface for IMT-2000," *ETRI Journal*, vol. 24, No. 6, pp. 415-428 , Dec. 2002.

28. K. Choi, K. Cheun, and T. Jung, "Adaptive PN code acquisition using instantaneous power-scaled detection threshold under Rayleigh fading and Gaussian pulsed jamming," *IEEE Transactions on Communications*, vol. 50, pp.1232-1235, Aug. 2002.
29. K. Choi, K. Cheun, and S. Kim, "Adaptive processing gain CDMA networks over Poisson traffic channel," *IEEE Communications Letters*, vol. 6, pp. 273-275, Jul. 2002.
30. K. Lim, K. Choi, S. Kim, and K. Kang, "Rain attenuation and Doppler Shift Compensation for Satellite Communications," *ETRI Journal*, vol. 24, pp. 31-42, Feb. 2002.
31. K. Choi, and K. Cheun, "Performance of asynchronous slow frequency-hop multiple access networks with MFSK modulation," *IEEE Transactions on Communications*, vol. 48, No. 2, Feb. 2000.
32. K. Cheun, K. Choi, H. Lim, and K. Lee, "Anti-jamming performance of a multicarrier DSSS system" *IEEE Transactions on Communications*, vol. 47, No. 12, pp. 1781-1784, Dec. 1999.
33. K. Choi, M. Jung, W. Lee, K. Cheun, and K. Won, "Design and implementation of a Grand Alliance HDTV receiver Prototype," *IEEE Transactions On Consumer Electronics*, vol. 43, No. 3, pp. 755-760, Jun. 1997.
34. K. Cheun, and K. Choi, "Performance of FHSS multiple-access networkd using MFSK modulation," *IEEE Transactions on Communications*, vol.44, No.11, pp. 1514-1526, Nov. 1996.
35. H. Lim, D. Lee, K. Cheun, K. Choi, M. Jung, and S. Choi, "Low-complexity receiver algorithms for the Grand-Alliance VSB HDTV aystem," *IEEE Transactions on Consumer Electronics*, vol.42 No.3, pp. 640-650, Aug. 1996

International Conference Papers

1. P. Shang, S. Kim and K. Choi, "Soft MMSE receiver for turbo coded MIMO system," *Wireless and Mobile Computing, Networking and Communications (WiMob)*, 2011.
2. B. Kim and K. Choi, "Uplink OFDMA schemes for loose multi-user synchronization," International Convergence on ICT Convergence (*ICTC*) 2011.
3. S. Amini and K. Choi, "Effect of feedback delay and channel gain difference on distributed beamforming," International Convergence on ICT Convergence (*ICTC*) 2011.
4. B. Kim and K. Choi, "Timing Offsets-Resilient OFDMA for Asynchronous Wireless Ad Hoc Networks," *ICCCN* 2011. (AR 29.6)
5. W. Liu, K. Choi and H. Liu, "Computationally efficient lattice reduction for MIMO-OFDM systems," *Wireless and Mobile Computing, Networking and Communications (WiMob)*, 2010.
6. P. Shang, S. Kim and K. Choi, "Soft ZF MIMO detection for turbo codes," *Wireless and Mobile Computing, Networking and Communications (WiMob)*, 2010.
7. P. Shang, Y. Kim, S. Kim and K. Choi, "Consideration of soft MIMO detection for turbo codes," *Wireless Communications Networking and Mobile Computing (WiCOM)*, 2010.
8. W. Liu, K. Choi and H. Liu, "Complexity-reduced channel matrix inversion for MIMO systems in time-varying channels," *VTC 2010-Spring*,
9. D. Lim, K Choi and H Liu, "Optimum power allocation for distributed antenna systems with large-scale fading-only feedback," *Sixth International Conference on Information Technology New Generations (ITNG)*, 2009.
10. B. Kim and K. Choi, "A very low complexity QRD-M algorithm based on limited tree search for MIMO systems," *VTC2008 Spring*.
11. K. Choi and B. Kim, "SNR measurement free adaptive K -best algorithm for MIMO systems," *WCNC* 2008.
12. A. Fayziyev and K. Choi, "Iterative decoding-based phase estimation for OFDM systems at low operating SNR," *25th AIAA International Communications Satellite Systems Conference 2007*, Apr, 2007.
13. K. Choi, B. Kim, and K. Kang, "Residual frequency offset compensation-embedded turbo decoder," *IEEE WCNC 2007*, Mar. 2007.
14. K. Choi and T. Han, "Orthogonal spreading code for quasi-synchronous CDMA based on scrambled Walsh sequence," *IEEE GLOBECOM 2006*, Nov. 2006
15. K. Choi, K. Kang and S. Kim, "Subcarrier scrambling-based PAPR reduction scheme for MC-CDMA systems," *DSPCS' 2005 & WITSP'2005*, Dec. 2005
16. K. Choi, "Orthogonal spreading code for quasi-synchronous CDMA based on scrambled Walsh sequence," *DSPCS' 2005 & WITSP'2005*, Dec. 2005
17. K. Choi, P. Kim, D. Oh, and H. Lee, "Iterative frequency and phase compensation under very low SNR," *JC-SAT 2005*, Oct. 2005
18. K. Choi and Y. Chae, "Optimum resource allocation with packet fragmentation for minimum average transmission delay in CDMA Networks," *CIC 2004*, Oct. 2004
19. K. Choi, K. Kang and S. Kim, "Peak power reduction scheme based on subcarrier scrambling for MC-CDMA systems," *Proceedings of ISSSTA 2004*, Aug. 2004

20. K. Choi and K. Cheun, "Throughput and optimum parameters of FHMA system with multilevel FSK," *Proceedings of ICC*, May, 2003
21. K. Choi, "Throughput-Delay Performance of interference level-adaptive CDMA packet network with variable spreading gain," *Proceedings of CIC 2003*, Aug, 2003
22. K. Choi and S. Kim, "Adaptive power/rate allocation for minimum mean transmission delay in CDMA networks," *Proceedings of VTC 2003 spring*, , Apr. 2003
23. K. Choi and S. Kim, "Optimum power / rate allocation for minimum delay in CDMA downlink," *Proceedings of CIC 2002, KTRC, ETRI*, Oct. 2002
24. W. Yang, K. Choi and S. Kim, "An improved channel quality estimation technique for OFDM system," *Proceedings of WPMC 2002*, No. 3, pp. 1289-1292, Oct, 2002
25. K. Kang, K. Choi and S. Kim, "Reduced search for optimum code sets to reduce PAPR in MC-CDMA System," *Proceedings of WPMC 2002*, No. 1, pp. 135-139, Oct. 2002
26. K. Choi and S. Kim, "Efficient calculation for error probability of Q-ary symbol consisting of multiple channel symbols under slow fading" *Proceedings of CIC 2001, KTRC, ETRI*, Oct. 2001
27. K. Choi, H. Lim, T. Kwon, S. Kim and K. Lim, "Novel compensation algorithm for rain fade and Doppler shift in DS-CDMA," 19th International Communications Satellite Systems Conference Exhibit, N-170, Apr, 2001
28. K. Choi, K. Cheun, T. Kwon and S. Lee, "Adaptive data rate transmission in CDMA networks over time varying traffic channel," *CIC'2000*, 2000
29. K. Choi, K. Cheun and K. Lee, "Adaptive PN Code Acquisition using Instantaneous Power-Scaled Detection Threshold under Rayleigh Fading and Gaussian Pulsed Jamming," *CIC' 99*, vol. 2, 1999
30. K. Choi, M. Jung, W. Lee, K. Cheun and K. Won, "Design and Implementation of a Grand Alliance HDTV receiver Prototype" *IEEE 1997 International Conference on Consumer Electronics*, vol. 1, pp.755-760, Aug. 1997
31. H. Lim, D. Lee, K. Chuen, K. Choi, M. Jung, and S. Choi, "Low-complexity symbol clock recovery and segment synchronization algorithm for the Grand Alliance VSB HDTV systems" *IEEE 1996 International Conference on Consumer Electronics*, vol. 1, pp.308-309, Jun. 1996

International Patents (Issued)

1. US Patent 7443904, Scrambling system and method for peak power reduction in MC-CDMA, and recording medium for storing corresponding program, Oct. 28, 2008.
2. US Patent 7349460, MC/MC-DS dual-mode adaptive multi-carrier code division access (CDMA) apparatus and method thereof, Mar. 25, 2008.
3. US Patent 7352689, Method for optimizing factor of sub-block signal in partial transmit sequence orthogonal frequency division multiplexing system Apr.1, 2008.
4. US Patent 7254117, Closed-loop power control apparatus for mobile satellite communication system and method thereof, Aug.7, 2007.
5. US Patent 7206333, Channel transmission symbol generating system for a multi-carrier communication system for reduction of multiple access interference and method thereof, Apr. 17, 2007.
6. US Patent 6310924, Digital Modulator, Oct 30, 2001.

Books

Kwonhue Choi, *Simulations for Communication Engineering and Digital Communications Using MATLAB and SIMULINK*, Hongrung Publishing Company, Korea. Feb. 2011, ISBN 978-89-7283-937-8.