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Education

Dec. 2003 PhD in Electrical Engineering,
Georgia Institute of Technology, Atlanta, Georgia, USA

Experience

Sep. 2020 – present Professor, School of Electrical Engineering,
Korea Advanced Institute of Science and Technology (KAIST), Korea
Sep. 2010 – Aug. 2020 Associate Professor, School of Electrical Engineering,
Korea Advanced Institute of Science and Technology (KAIST), Korea
Mar. 2009 – Aug. 2010 Assistant Professor, School of Electrical Engineering,
Korea Advanced Institute of Science and Technology (KAIST), Korea
Sep. 2004 – Feb. 2009 Assistant Professor, School of Engineering,
Information and Communications University (ICU), Korea
Mar. 1994 – July 1999 Member of Research Staff in Electronics and Telecommunications Research
Institute (ETRI), Korea

Publications

Selected Journal Papers

- [1] J. Park, S. Yun, I. Kim and J. Ha, "Secure Communications with a Full-Duplex Relay Network under Residual Self-Interference," *IEEE Communications Letters*, vol. 24, issue 3, pp. 496-500, Mar. 2020
- [2] S. Yun, J. Kang, I. Kim and J. Ha, "Deep Artificial Noise: Deep Learning-based Precoding Optimization for Artificial Noise Scheme," *IEEE Transactions on Vehicular Technology*, vol. 69, issue 3, pp. 3465-3469, Mar. 2020
- [3] S. Hwang, S. Moon, J. Jung, D. Kim, I. Park, Y. Lee, and J. Ha, "Energy-efficient Symmetric BC-BCH Decoder Architecture for Mobile Storages," *IEEE Transactions on Circuits and Systems I*, vol. 66, issue 11, pp. 4462-4475, Nov. 2019
- [4] S. Jeong, and J. Ha, "On the Design of Multi-Edge Type Low-Density Parity-Check Codes," *IEEE Transactions on Communications*, vol. 67, issue 10, pp. 6652-6667, Oct. 2019
- [5] S. Yun, I. Kim, and J. Ha, "Artificial Noise Scheme for Correlated MISO Wiretap Channels," *IEEE Transactions on Vehicular Technology*, vol. 68, issue 9, pp. 9323-9327, Sep. 2019
- [6] J. Oh, S. Han, and J. Ha, "An improved Symbol-flipping Algorithm for Nonbinary LDPC Codes and Its Application to NAND Flash Memory," *IEEE Transactions on Magnetics*, vol. 55, issue 9, Sep. 2019
- [7] D. Kim, and J. Ha, "Symmetric Block-wise Concatenated BCH Codes for NAND Flash Memories," *IEEE Transactions on Communications*, vol. 66, issue 10, pp. 4365-4380, Oct. 2018
- [8] J. Oh, and J. Ha, "A Two-Bit Weighted Bit-Flipping Decoding Algorithm for LDPC Codes," *IEEE Communications Letters*, vol. 22, issue 5, pp. 874-877, May 2018

- [9] S. Yun, S. Im, I. Kim, and J. Ha, "On the Secrecy Rate and Optimal Power Allocation for Artificial Noise Assisted MIMOME Channels," *IEEE Transactions on Vehicular Technology*, vol. 67, issue 4, pp. 3098-3113, Apr. 2018
- [10] J. Kang, J. Yang, J. Ha, I. Kim, "Joint Design of Optimal Precoding and Cooperative Jamming for Multi-User Secure Broadcast Systems," *IEEE Transactions on Vehicular Technology*, vol. 66, issue 11, pp. 10551-10556, Nov. 2017
- [11] J. Nam, G. Caire, YJ. Ko, J. Ha, "On the Role of Transmit Correlation Diversity in Multiuser MIMO Systems," *IEEE Transactions on Information Theory*, vol. 63, no. 1, pp. 336-354, Jan. 2017

Awards and Honors

- IEEE Senior member since 2017
- IEEE Data Storage Best Paper Award for 2018-2019
- International Conference on ICT Convergence (ICTC), Best Paper Awards, 2015, 2019
- SK-Hynix Outstanding Patent Award 2015
- Outstanding Research Award, Basic Science Research Program Korea Research Foundation (KRF), 2014
- Exemplary Reviewer in IEEE Communications Letters, 2012
- Outstanding Research Achievements, Basic Science Research Program Korea Research Foundation (KRF), 2012

Invited Talks

- A Strong Hard-Decision Error-Correcting Code for NAND Flash Memories: Quasi-Primitive Block-wise Concatenated BCH Codes, Broadcom, USA, Mar. 2016
- A Strong Hard-Decision Error-Correcting Code for NAND Flash Memories: Quasi-Primitive Block-wise Concatenated BCH Codes, Huawei, USA, Mar. 2016
- Block-wise Concatenated Codes for NAND Flash Memories, SK HNS, USA, Aug. 2013
- Block-wise Concatenated Codes for NAND Flash Memories, LSI Logic, USA, Aug. 2013
- On the Design of Secure Codes at Finite Lengths for Wiretap Channels, POSTECH, Sep., 2012
- On the Design of Secure Codes at Finite Lengths for Wiretap Channels, Tohoku University, Sendai, Japan, Aug. 2012
- On the Design of Secure Codes at Finite Lengths for Wiretap Channels, University of Ottawa, Canada, June, 2012
- On the Design of Secure Codes at Finite Lengths for Wiretap Channels, Georgia Institute of Technology, USA, June, 2012
- On the Design of Secure Codes at Finite Lengths for Wiretap Channels, Samsung Advanced Institute of Technology, June 2012
- Error-Control Codes for NAND flash Memories, Samsung Semiconductor, Dec. 2011
- Secure Type-Based Multiple-Access, SOIM-GCOE, Tohoku University, 2010
- Rate-Compatible Punctured Low-Density Parity-Check Codes and Their Applications, Seoul National University (SNU), May 2006