

Heung-No Lee, Ph.D.



Professor
GIST (Gwangju Inst. of Sci. and Tech.)
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Professional Interest

The candidate is seeking a professional opportunity for teaching and research. Primary teaching interests include machine learning, communications, information theory, and signal processing, and research interests include *machine learning*, signal processing, computational intelligence, computational imaging, communications, networks and Blockchain.

Education

Ph.D. in Electrical Eng., University of California, Los Angeles, Dec. 1999
Title of Dissertation: Adaptive Diversity Combining, Equalization and Sequence Decoding for Time-Varying Dispersive Channels
Advisor: Gregory J. Pottie, Ph.D.
M.S. in Electrical Eng., University of California, Los Angeles, Oct. 1994
B.S. in Electrical Eng., University of California, Los Angeles, June 1993

Professional Positions Held

Director of AI Research Institute, GIST, Korea
2021.1-2023.1

Advisory member of The Presidential Commission on Policy Planning,
2020.9 – 2021.9

CEO of LiverVance Co., Ltd. GIST Professor Start-up Venture
2020.1 – Present

Blockchain Advisory Committee of Korea Post Information Center
2018.10 – 2019.12

Director of Blockchain Internet Economic Research Center, GIST, Korea,
2018.8 – Present

Chairman of Communications Society of The Institute of Electronics Engineers of Korea, 2017.1 – 2019.12

JCCI Academic Vice President of the Korean Institute of Communication Sciences, 2017.1 – 2017.12

Vice Chairman of The Institute of Electronics Engineers of Korea (Registered Director) , 2017.1 – 2018.12

Future Science & Technology Holding Co., Ltd., Executive Director,
2016.9 – 2017.11

Research Director, GIST, Korea, 2016.9 – 2017.11

Director of Research Policy Center, GIST, Korea, 2016.9– 2017.05

Director of Intelligent Sensors Research Center, GIST, Korea, 2015.12–
Present

Member of R & D Special Zone Committee of Future Creation Science Department, 2015.12-2017.12.

Executive Director, Academic, Planning Department of The Institute of Electronics Engineers of Korea, 2015, 2016.

Visiting Professor, Choonam National University Hospital, 2012 – 2016

Professor, GIST, Korea
School of Electrical Engineering and Computer Science, 2009.1--Present.

Assistant Professor, the University of Pittsburgh, Pittsburgh, U.S.A.
Electrical and Computer Eng. Department 2002.1 – 2008.12

Research Staff Member, HRL Laboratories, L.L.C., (Formerly Hughes Research Laboratories)
Information Science Laboratory, 1999.12 – 2002.1

Awards and Honors

- Korean Society of Electronic Engineering Haedong scholarly Award 2019
- GIST Research Award 2016 (for Contribution to Industrialization)
- Top 11 Research Outcomes of GIST, 2016.
- National Research Foundation, **This Month Science/Engineer Award**, January 2014.
- **Top 50 Achievements of National Research and Development**, awarded by *National Research Foundation of Korea*, Oct. 15th, 2013.
- **Top 100 Achievements of National Research and Development**, awarded by *Korean Ministry of Science, ICT and Planning*, August, 28th, 2013.
- Best Poster Award at the 6th International Symposium for Aging, Gwangju, Korea, Oct. 20th, 2012.
- National Research Laboratory of Korea, 2010, National Research Foundation.
- University of Pittsburgh Central Research Development Grant Awards: 2002, 2005
- Pittsburgh Digital Greenhouse Research Grant Award 2002
- Who's who in America, nominated in 2001 and 2005.
- Departmental Scholar awarded upon graduation of UCLA, 1993
- Graduated UCLA as an Honor Student (Cum Laude)
- Member of Tau Beta Phi honor society

International Journal Editorship/Special Interest Group Membership

- Elected Member of IEEE Computational Imaging Special Interest Group, Jan. 2017 - Dec. 2019.
- Area Editor for AEU--International Journal of Electronics and Communications. Areas include channel coding, information theory, signal processing, communications theories. January 2013 - 2016.
- Lead Guest Editor for EURASIP Journal on Wireless Communications and Networking. Special Issue on Networking Coding for Wireless Networks, Other Guest Editors: Sae-Young Chung (KAIST), Christina Fragouli (EPFL), and Zhi-Hong Mao (University of Pittsburgh). **On-Line Publication:** <http://www.hindawi.com/journals/wcn/2010/si.nwc.html> (Link taken on Jan. 8th, 2011).

Professional Society Activities

IEEE Senior Member

- since March 2013

International Technical Program Committees

- IEEE WCNC 2013, IEEE Globecom 2013 (Wireless Network), IEEE International Conference on Communications 2013 (Wireless Network)

- IEEE PIMRC 2012, 2013: Wireless Networks and Cross-Layer Tracks
- IEEE International Conference on Communications 2012: Wireless Network Symposium.
- IEEE International Conference on Communications 2012: Ad-hoc and Sensor Networking Symposium.
- IEEE Globecom 2009, Nov.30th-Dec. 4th, Honolulu, Hawaii, USA
- IEEE/CME International Conference on Complex Medical Engineering 2009: April 9-11 at Tempe, AZ, USA
- IEEE International Conference on Communications 2008: Communication Theory Symposium, Beijing, China.
- International Wireless Communications & Mobile Computing Conference, MIMO Systems Symposium, August 12-16, 2007, Turtle Bay Resort, Honolulu, Hawaii.
- IEEE International Conference on Communications 2007: Communication Theory Symposium, Scotland.
- IEEE International Conference on Communications 2005: Communication Theory Symposium, Seoul, Korea

IEEE Chapters

- Gwangju Section Chair, Jan. 2013 – Feb. 2017
- Gwangju Section Secretary, Jan. 2010 – Dec. 2012
- Pittsburgh Chapter Chair for IEEE Signal Processing Society, June 2005 -- Dec. 2008.

IEEE Conference Session Chairs

- IEEE Wireless Communications and Network Conference, Las Vegas, Nevada, USA
- IEEE International Conference on Communications 2005: Communication Theory Symposium

Panels for Competitive National Science Foundation Programs (U.S.A.)

- SBIR/STTR: Wireless Sensor Networks, program director: Dr. Murali Nair, Date July 31st, 2007.
- CISE Networking Division, NeTS: Service Date: June 1-2, 2006, Program Director: Du David.
- CISE Networking Division, NeTS: NOSS-Panel, Service Date: April 20-21, 2006, Program director: Guru Parulkar.
- SBIR/STTR, program director: Dr. Murali Nair, date: August 26, 2005.
- CISE Networking Division, Service Date: May 9-10th, 2005. Program Director: Dr. Joseph Evans.
- SBIR, program director: Dr. Murali Nair, date: September 15, 2003.

Publications

Books/Book Chapters

- A. Kumar, B. Kuldeep, I. Sharma, G. K. Singh, Heung-No Lee, “Advances in Multirate Filterbanks: a research survey”, Advances in Multirate Systems, Springer.
- B. Kuldeep, A. Kumar, G. K. Singh, Heung-No Lee, “Design of Multi-channel Filterbank using Minor Component Analysis and Fractional derivative Constraints”, Advances in Multirate Systems, Springer.
- A. Vishawkarma, A. Kumar and Heung-No Lee, “Design of Non-uniform Linear-Phase Transmultiplexer System for Communication”, Advances in Multirate Systems, Springer.
- Soogil Woo, Seungchan Lee, Younghak Shin, Heung-No Lee, Review of Applications for Wireless Brain-Computer Interface systems, Emerging Theory and Practice in Neuroprosthetics , Chapter 8, IGI Global, Pennsylvania, U.S.A., 2014.
- Seungchan Lee, Younghak Shin, Soogil Woo, and Heung-No Lee, A Review of Wireless Brain-Computer Interface systems, Brain-Computer Interface, Chapter 11, InTech, June, 2013
- Jae-Gun Choi, Sang-Jun Park, and Heung-No Lee, Intelligent Sensor Networks: Across Sensing, Signal Processing, and Machine Learning, Chapter 15, Taylor & Francis LLC, CRC Press, 2012.
- Heung-No Lee, Adaptive Wireless Transceivers, Lambert Academic Publishing, ISBN 978-3-8383-1889-9, Saarbrücken, Germany, 2010.
- Heung-No Lee, Adaptive Diversity Combining, Equalization, and Sequence Decoding, Ph.D. Dissertation, UCLA, 1999.

Refereed Journals

[+ Students, Postdoc++, * Corr]

Published (Accepted)

1. H. Singh, A. Kumar, L.K.Balyan and Heung No Lee, “Spatial Entropy Quartiles based Texture Aware Fractional-order Unsharp Masking for Visibility Enhancement of Remotely Sensed Images”, IEEE Transactions on Systems, Man, and Cybernetics: Systems, (Impact Factor: 9.309, Do-Yak project).
2. Nikhil Agrawal, Anil Kumar, B. Kuldeep, S. Lee, H. N. Lee, “Weighted Least Square Design Technique for Hilbert Transformer using Fractional Derivative”, Signal, Image and Video Processing (Springer), Accepted (Impact factor: 1.794, Do-Yak project)

3. Mohamed Yaseen Jabarulla and Heung-No Lee*, “Blockchain-Based Distributed Patient-Centric Image Management System”, *Applied Sciences*, 11(1), 196, Dec. 2020. doi: <https://doi.org/10.3390/app11010196>. (IF: 2.474, Do-Yak and IITP)
4. Jehyuk Jang and Heung-No Lee, “Profitable Double-Spending Attacks,” *Applied Sciences*, 10, 8477, .Nov. 2020. doi: <https://doi.org/10.3390/app10238477>. (IF: 2.474, Do-Yak and IITP)
5. Pavel Ni, Heung-No Lee*, “High-Resolution Ultrasound Imaging Enabled by Random Interference and Joint Image Reconstruction”, *Sensors* 2020, 20(22), 6434 (impact Factor: 3.275, Do-Yak project)
6. Hyunjun Jung, Heung-No Lee*, “ECCPoW: Error-Correction Code Based Proof-of-Work for ASIC Resistance”, *Symmetry*, June. 2020, Vol.12(6), 988 (impact Factor: 2.143, Do-Yak project)
7. Pavel S. Ni, and Heung-No Lee*, “High-Resolution Ultrasound Imaging Using Random Interference“, *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control (T-UFFC)*, March. 2020. (Impact Factor: 2.989, Do-Yak project)
8. Cheolsun Kim, Dongju Park, and Heung-No Lee*, “Compressive sensing spectroscopy using a residual convolutional neural network”, *MDPI Sensors*, Vol. 20(3), Jan. 2020. (Impact Factor: 3.031, Do-Yak project).
9. Seungchan Lee, Younghak Shin, Anil Kumar, Kiseon Kim, and Heung-No Lee*, “Two-Wired Active Spring-Loaded Dry Electrodes for EEG Measurements”, *MDPI Sensors*, Vol.19, No.20, Article 4572, Oct. 2019. (Impact Factor: 3.031, Do-Yak project, Brain research project)
10. H. Singh, A. Kumar, L.K. Baylan, and Heung-No Lee*, “Optimally sectioned and successively reconstructed histogram sub-equalizaion based gamma correction for satellite image enhancement”, *Multimedia Tools and Applications*, Vol.2019, No.78, pp20431-20463, Jul.2019 (Impact Factor : 2.101, Doyak Project)
11. H. Singh, A. Kumar, L.K. Baylan, and Heung-No Lee*, “Fractional Order Integration Based Fusion Model for Piecewise Gamma Correction along with Textural Improvement for Satellite Images,” *IEEE Access*, Accepted. (Impact Factor: 3.244, Doyak Project)
12. Kiwon Yang, Jusung Kang, Jehyuk Jang and Heung-No Lee*, “Multimodal Sparse Representation-Based Classification Scheme for RF Fingerprinting,” *IEEE Communications Letters*, Vol.23, Issue 5, pp867-870, May 2019 (Impact Factor: 2.723, Doyak Project)

13. Anil Kumar, Seungchan Lee and Heung-No Lee* , “A New Design Method for FIR Notch Filter using Fractional Derivative and Swarm Intelligence,” *Sadhana*, 2019 (Impact Factor: 0.592, Doyak Project)
14. Cheolsun Kim. Woong-Bi Lee, Soo Kyung Lee, Yong Tak Lee, and Heung-No Lee*, “Fabrication of 2D thin-film filter-array for compressive sensing spectroscopy”, *Optics and Lasers in Engineering*, Vol. 115, pp. 53-58, Apr. 2019. (Impact Factor: 3.388 Doyak project)
15. Sangjun Park and Heung-No Lee*, “Fast Mixed Integer Quadratic Programming for Sparse Signal Estimation,” *IEEE Access*, Accepted. (Impact Factor: 3.244, Doyak Project)
16. Iqbal Zafar, Heung-No Lee*, Saeid Nooshabadi, ”Highly Reliable Decision-Making Using Reliability Factor Feedback for Factory Condition Monitoring via WSNs”, *Wireless Communications and Mobile Computing*, Vol. 2018, Oct. 2018. (Impact Factor:0.869, Doyak project)
17. Anil Kumar, N. Agrawal, I. Sharma, Seungchan Lee, and Heung-No Lee*, “Hilbert Transform Design based on Fractional Derivatives and Swarm Optimization,” *IEEE Trans. on Cybernetics*, Early Access, 2018 (Impact Factor: 8.80, Doyak Project)
18. Seonggeon Kim, Uihyun Yun, Jehyuk Jang, Geunsu Seo, Jongjin Kang, Heung-No Lee, Minjae Lee *, “Reduced Computational Complexity Orthogonal Matching Pursuit Using a Novel Partitioned Inversion Technique for Compressive Sensing,” *Electronics*, Vol.7, No.9, Sep. 2018 Impact Factor: 2.11)
19. Seungchan Lee, Younghak Shin, Anil Kumar, Minhee Kim, and Heung-No Lee*, “Dry Electrode-based Fully Isolated EEG/fNIRS Hybrid Brain-monitoring System”, *IEEE Trans. on Biomedical Engineering*. Early Access. 2018. (Impact Factor: 4.28, Do-Yak project, Brain research project)
20. Mohamed Yaseen Jabarulla and Heung-No Lee, “Speckle Reduction on Ultrasound Liver Images Based on a Sparse Representation over a Learned Dictionary” *Applied Sciences-MDPI*. Vol. 8, no, 6, pp 903, May. 2018. (Impact Factor: 1.689, Do-Yak Project)
21. Jehyuk Jang+ Sanghun Im, and Heung-No Lee*, “Intentional Aliasing Method to Improve Sub-Nyquist Sampling System”, *IEEE Transactions on Signal Processing*, Vol. 66 (No.12), pp. 3311-3326, Jun. 2018 (Impact Factor: 4.300, Hanwha project)
22. Mohamed Yaseen Jabarulla+ and Heung-No Lee*, “Speckle Reduction on Ultrasound Liver Images Based on a Sparse Representation over a Learned

- Dictionary” Applied Sciences-MDPI, Vol. 8 (No.6), pp. 903, May. 2018 (Impact Factor: 1.679, Do-Yak Project).
23. Woong-Bi Lee+, and Heung-No Lee*, “Depth-estimation-enabled compound eyes,” *Optics Communications*, Vol. 412, pp. 178-185, Apr. 2018 (Impact Factor: 1.588, Do-Yak Project).
 24. Richa Khokhra, Bandna Bharti, Heung-No Lee*, and Rajesh Kumar*, “Visible and UV photo-detection in ZnO nanostructured thin films via simple tuning of solution method,” published online in *Scientific Reports-Nature*, Nov. 2017 (Impact Factor:4.259, Do-Yak Project).
 25. M. asif raza+, Zafar Iqbal+, Sang-Seon Byun, Hyunduk Kang, Heung-No Lee*, “A Versatile Coexistence Decision-Making System for Efficient TV Whitespace Sharing among Whitespace Objects.” *Wireless Communications and Mobile Computing*, Aug. 2017 (Impact Factor 1.899)
- A. Kumar, B. Kuldeep, G. K. Singh and Heung No Lee, “An Improved Design Method based on Polyphase Components for Digital FIR Filters,” *International Journal of Electronics* (Early Access). <http://dx.doi.org/10.1080/00207217.2017.1329950>, (Impact Factor: 0.729, Acknowledgement – None)
26. Mohamed Yaseen J+ and Heung-No Lee*, “Computer Aided Diagnostic System for Ultrasound Liver Images: A Systematic Review,” *Optik – International Journal for Light and Electron Optics*, Vol. 140, pp. 1114-1126, Jul. 2017. (Impact Factor: 0.835, Do-Yak Project)
 27. Muhammad Asif Raza+, Sangjun Park+ and Heung-No Lee*, “Evolutionary Channel Sharing Algorithm for Heterogeneous Unlicensed Networks,” *IEEE Transactions on Wireless Communications* (Early Access). <http://dx.doi.org/10.1109/TWC.2017.2697880>, (Impact Factor: 4.951, Do-Yak Project)
 28. Ranjeet Kumar, Anil Kumar, G.K. Singh, and Heung-No Lee, “Efficient compression technique based on temporal modelling of ECG signal using principle component analysis,” *IET Science Measurement & Technology*, Vol. 11, No. 3, pp. 346-353, May, 2017. (Impact Factor: 1.263, Acknowledgement – None)
 29. Sangjun Park+, Nam Yul Yu, Heung-No Lee*, “An Information-Theoretic Study for Joint Sparsity Pattern Recovery with Different Sensing Matrices,” *IEEE Transactions on Information Theory* (Early Access). <http://dx.doi.org/10.1109/TIT.2017.2704111>, (Impact Factor: 2.679, Do-Yak Project)
 30. I. Sharma, A. Kumar, and G. K. Singh, H.-N. Lee “Design of Multiplier Less Prototype Filter for Two-channel Filter Bank using Hybrid Method in FCSD Space”, *IET Circuits, Devices & Systems*, (ISI-Cited Publication) (in press) (Impact factor: 0.590, Acknowledgement – None)

31. Zafar Iqbal+, Kiseon Kim, and Heung-No Lee*, “A cooperative wireless sensor network for indoor industrial monitoring,” *IEEE Transactions on Industrial Informatics*, Vol. 13, No. 2, pp. 482-491, Apr. 2017. (Impact Factor: 4.708, Do-Yak Project)
32. Bandna Bharti, Santosh Kumar, Heung-No Lee, and Rajesh Kumar, “Formation of oxygen vacancies and Ti³⁺ state in TiO₂ thin film and enhanced optical properties by air plasma treatment,” Accepted for publication in *Scientific Reports-Nature*, (PDF) (Impact Factor: 5.228, Do-Yak Project)
33. Zafar Iqbal+ and Heung-No Lee*, “Spatially concatenated channel-network code for underwater wireless sensor networks,” *IEEE Transactions on Communications*, Vol. 64, No. 9, pp. 3901-3914, Sep. 2016. (Impact Factor: 2.298, Do-Yak Project)
34. Hwanchol Jang+, Saeid Nooshabadi, Kiseon Kim, and Heung-No Lee*, “Circular Sphere Decoding: A Low Complexity Detection for MIMO Systems with General Two-dimensional Signal Constellations,” *IEEE Trans. on Vehicular Technology*, Vol. 66, No. 3, pp. 2085-2098, Mar. 2017. (Impact Factor: 1.978, Do-Yak)
35. Woong-Bi Lee+, Hwanchol Jang+, Sangjun Park+, Yong Min Song, and Heung-No Lee*, “COMPU-EYE: a high resolution computational compound eye,” *Optics Express*, Vol. 24, No. 3, pp. 2013-2026, Feb. 8, 2016. (Impact Factor: 3.587; Do-Yak Project)
36. Pawan Kumar, Rajesh Kumar* and Heung-No Lee* “Magnetic field induced one-dimensional nano/micro structures growth on the surface of iron oxide thin film,” *Thin Solid Films*, Vol.592, pp.155-161, Oct. 2015. (Impact Factor: 1.759, Do-yak project)
37. Younghak Shin, Seungchan Lee, Minkyu Ahn, Hohyun Cho, Sung Chan Jun and Heung-No Lee* “Simple Adaptive Sparse Representation based Classification Schemes for EEG based Brain-Computer Interface Applications,” *Computers in Biology and Medicine*, Vol.66, pp.29-38, Nov. 2015. (Impact Factor: 1.240, Do-yak project)
38. Younghak Shin, Seungchan Lee, Minkyu Ahn, Hohyun Cho Sung Chan Jun and Heung-No Lee*, “Noise Robustness Analysis of Sparse Representation based Classification Method for Non-stationary EEG Signal Classification,” *Biomedical Signal Processing and Control*, Vol.21, pp. 8-18, Aug. 2015. (Impact Factor: 1.532; Do-Yak Project).
39. Hwanchol Jang, Changhyeong Yoon, Euiheon Chung, Wonshik Choi, and Heung-No Lee*, “Holistic random encoding for imaging through multimode fibers,” *Optics Express*, Vol. 23, No. 5, March 2015. (Impact Factor: 3.587; Do-Yak Project)
40. Jaewook Kang, Heung-No Lee and Kiseon Kim, “Bayesian Hypothesis Test using Nonparametric Belief Propagation for Noisy Sparse Recovery,” *IEEE Transactions on Signal Processing*, vol. 63, Iss. 4, Jan. 2015 (Impact Factor: 3.198; Do-Yak Project)
41. Pawan Kumar, Nitin Rawat, Da-Ren Hang, Heung-No Lee and Rajesh Kumar, “Controlling band gap and refractive index in dopant free α -Fe₂O₃ films,” Accepted for Publication in *Electron Material Letters*.

42. Pawan Kumar, Heung-No Lee, Rajesh Kumar, "Synthesis of phase pure iron oxide polymorphs thin films and their enhanced magnetic properties," *J Mater Sci: Mater Electron*, (2014) 25:4553–4561.
43. Hwanchol Jang, Changhyeong Yoon, Euiheon Chung, Wonshik Choi, and Heung-No Lee, "Speckle suppression via sparse representation for wide-field imaging through turbid media," *Optics Express*, Vol. 22, No. 13, pp. 16619–16628, June 2014.
44. 36. Jin-Taek Seong and Heung-No Lee, "Predicting the Performance of Cooperative Wireless Networking Schemes with Random Network Coding," *IEEE Transactions on Communications*, vol. 62, no. 8, pp. 2951-2964, Aug. 2014.
45. Richa Khokhra, Nitin Rawat, Partha Barman, Hwan-Chol Jang, Rajesh Kumar, Heung-No Lee, "Enhancing the numerical aperture of lenses using ZnO nanostructures-based turbid media," *Journal of Optics*, Oct. 2013.
46. Jin-Taek Seong and Heung-No Lee*, "Necessary and Sufficient Conditions for Recovery Performance of Sparse Signals over Finite Fields," *IEEE Communications Letters*, vol. 17, no. 10, pp. 1976-1979, Oct. 2013.

47. Sang-Seon Byun, Ilanko Balasingham, and Heung-No Lee "An Inventory Model-based Spectrum Pooling for Wireless Service Provider and Unlicensed Users," *Computer Communications*, Vol. 36, issues. 10-11, pp. 1186–1191, April 4th, 2013.
48. Pawan Kumar, Raj Kumar Singh, Nitin Rawat, Partha Bir Barman, Subhash Chander Katyal, Hwanchol Jang, Heung-No Lee*, and Rajesh Kumar*, "A novel method for controlled synthesis of nanosize hematite (α -Fe₂O₃) thin film on liquid vapor interface" *Journal of Nano Particle Research*, March, 2013.
49. Junil Ahn, Heung-No Lee, Kiseon Kim, "Expected complexity analysis of increasing radii algorithm by considering multiple radius schedules," *IET Communications*, Vol. 7, Iss. 3, pp. 229-235, Feb, 2013.
50. J. Oliver, WoongBi Lee, and Heung-No Lee*, "Filters with random transmittance for improving resolution in filter array based spectrometers," *Optics Express*, vol. 21, No. 4, pp. 3969–3989, Feb. 2013.
51. Wooyeol Choi+, Taewoon Kim+, Daeyoung Park+, Heung-No Lee and Hyuk Lim*, Coordinating Transmit Power and Carrier Phase for Wireless Networks with Multi-Packet Reception Capability, *EURASIP Wireless Communications and Networking*, 2nd, Jan. 2013.
52. Jin-Taek Seong+ and Heung-No Lee*, "4-ary Network Coding for Two Nodes in Cooperative Wireless Networks: Exact Outage Probability and Coverage Expansion," *EURASIP Wireless Communications and Networking*, Accepted.

53. Zafar Iqbal+, Saeid Nooshabadi, and Heung-No Lee*, "Analysis and Design of Coding and Interleaving in a MIMO-OFDM Communication System," to appear in *IEEE Transactions on Consumer Electronics*, August 2012 Issue.
54. Sang-Seon Byun++, Ilanko Balasingham, Athanasios V. Vasilakos, and Heung-No Lee*, "Computation of an Equilibrium in Spectrum Markets for Cognitive Radio Networks," to appear *IEEE Transactions on Computers*.
55. Younghak Shin+, Seungchan Lee+, Junho Lee+ and Heung-No Lee*, "Sparse representation-based classification (SRC) scheme for motor imagery-based brain-computer interface systems," *Journal of Neural Engineering*, no. 9, Aug. 2012.
56. J. Oliver++, WoongBi Lee+, SangJun Park+, and Heung-No Lee*, "Improving resolution of miniature spectrometers by exploiting sparse nature of signals," *Optics Express*, vol. 20, no. 3, pp. 2613-2625, Jan. 2012.
57. H. Kim+, D. Har, Z.-H. Mao, M. Sun, and Heung-No Lee*, "Efficient Joint Source-Channel Decoding of Multi-State Markov Sequences," *IET Communications*, vol 6. issue 9, no. 3, pp. 2613-2625, Jan. 2012.
58. Cheng-Chung Chang+*, T.-Y. Kuo, Y.-C. Lo, Heung-No Lee, D. Askey, Zhi-Hong Mao, "User-satisfaction based bandwidth allocation for transmission of multiple sources of human perceptual data," *Journal of the Franklin Institute*, vol. 249, issue 3, pp. 879-890, April 2012.
59. Junil Ahn+, Heung-No Lee, Kiseon Kim*, "A Near-ML Decoding with Improved Complexity over Wider Ranges of SNR and System Dimension in MIMO Systems," *IEEE Trans. on Wireless Communications*, vol. 11, issue 1, pp. 33-37, Jan. 2012.
60. Heung-No Lee*, Seyoung Chung, Christian Fragouli, and Zhi-Hong Mao, "Editorial: Special Issue on Network Coding for Wireless Networks," *EURASIP Journal on Wireless Communications and Networking*, 2011.
61. R. Vinjamuri+, M. Sun, C.-C. Chang+, Heung-No Lee, R. J. Scabassi, and Z.-H. Mao*. Dimensionality reduction in control and coordination of the human hand. *IEEE Transactions on Biomedical Engineering*, 57(2), pp. 284-295, Feb. 2010.
62. Cheng-Chun Chang+, Zhi-Hong Mao, and Heung-No Lee*, "Majority Rule Based Iterative Decoding Algorithm for LDGM Codes," vol. 90, Issue 1, pp. 373-377, *Signal Processing*, Jan. 2010.
63. R. Vinjamuri+, M. Sun, C.C. Chang+, Heung-No Lee, R. Scabassi, and Z.-H. Mao*, "Temporal Postural Synergies of the Hand in Rapid Grasping Tasks," *IEEE Trans. on Information Technology in Biomedicine*, vol. 14, no. 4, pp. 986-994, Jul. 2010.

64. Heung-No Lee*, J. Zhang+, and C.W. Choi, "General random coding bounds: AWGN channels to MIMO channels," *Annals of Telecommunication*, vol. 65, issue. 1, pp. 87-99, 2010.
65. Cheng-Chun Chang+ and Heung-No Lee*, "A Fast Simulation Method for LDGM Codes," *Journal of the Franklin Institute*, vol. 347, issue. 7, pp. 1368-1373, 2010
66. Mir H. Mahmood+, C.C. Chang+, D. Jung+, Z.H. Mao, H. Lim, and Heung-No Lee*, "Throughput Behavior of Link Adaptive 802.11 DCF with MUD Capable Access Node," *AEU International Journal of Electronics and Communications*, vol. 64, pp. 1031-1041, 2010.
67. J. Zhang+ and Heung-No Lee*, "Energy-Efficient Utility Maximization for Wireless Networks with/without Multipath Routing," *International Journal of Electronics and Communications*, Volume 64, Issue 2, February 2010, Pages 99-111.
68. Z.-H. Mao*, Heung-No Lee, R. Sciabassi, and M. Sun, "Information Capacity of the Thumb and Index Finger in Communication," *IEEE Trans. Biomedical Engineering*, Vol. 56, No. 5, pp. 1535-1546, May. 2009.
69. R. Vinjamuri+, D.J. Crammond, D. Kondziolka, Heung-No Lee, and Zhi-Hong Mao*, "Extraction of Sources of Tremor in Hand Movements of Patients with Movement Disorders," vol. 13, no.1, pp. 49-56, *IEEE Trans. on Information Technology in Biomedicine*, Jan. 2009.
70. J. Zhang+ and Heung-No Lee*, "Performance Analyses on LDPC Coded System over Quasi-Static (MIMO) Fading System," *IEEE Trans. on Communications*, vol. 56, issue 12, pp. 2080-2093, Dec. 2008.
71. X. Song+ and Heung-No Lee*, "Multimode Precoding for MIMO Systems Performance Bounds and Limited Feedback Codebook Design," *IEEE Trans. on Signal Processing*, vol. 56, no. 10, pp. 5296-5301, Oct. 2008.
72. J. Zhang+ and Heung-No Lee*, "Throughput Enhancement with a Modified 802.11 MAC Protocol with Multi-User Detection Support," *International Journal of Electronics and Communications*, vol. 62, issue 5, pp. 365-373, May, 2008.
73. C.C. Chang+ and Heung-No Lee*, "On the Estimation of Target Spectrum for Filter-Array Based Spectrometers," *Optics Express*, vol. 16, no. 2, pp. 1056-61, Jan. 2008.

74. J. Wu+ and Heung-No Lee*, "Performance Analysis for LDPC Coded Modulation in MIMO Multi-Access Systems," *IEEE Trans. on Communications*, vol. 55, no. 7, pp.1417-1426, July, 2007.
75. J. Zhang+ and Heung-No Lee*, "Performance Analysis of LDPC-Coded Space-Time Modulation over MIMO Fading Channels," *IEEE Communications Letters*, vol. 11, Issue 3, pp. 234 – 236, March 2007.
76. J. Zhang+ and Heung-No Lee*, "A Performance Bound on Random-Coded MIMO Systems," *IEEE Communications Letters*, vol.10, no.3, pp.168-170, March, 2006.
77. J. Zhang+ and Heung-No Lee*, "Union Bounds on LDPC Coded Modulation Systems over Fast Fading MIMO Channels," vol. 9, no.9, pp. 796-798, *IEEE Communications Letters*, Sept. 2005.
78. Heung-No Lee* and X. Hu+, "Robust Iterative Tree-Pruning Detection and LDPC Decoding," *IEEE Journal of Selected Areas on Communications*, vol. 23, no.5, pp. 1013-1025, May 2005.
79. Heung-No Lee* and G. J. Pottie, "Fast Adaptive Equalization/Diversity Combining for Time Varying Dispersive Channels", *IEEE Transactions on Communications*, vol. 46, no. 9, pp. 1146-1162, Sept. 1998.

Refereed International Conference/Workshop Presentations

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