Heung-No Lee, Ph.D.

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Professional Interest

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

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**, Dec. 1994
- **B.S. in Electrical Eng., University of California, Los Angeles, June 1993**

Professional Positions Held

- **Director of ITRC Blockchain Intelligence Convergence Research Center, 2021.7 – 2029.6**

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

- **Advisory member of The Presidential Commission on Policy Planning, 2020.9 – 2022.9**

- **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 Ministry of Science, ICT and Future Planning, 2015.12 – 2017.12**
- **Executive Director, Academic, Planning Department of The Institute of Electronics Engineers of Korea, 2015, 2016**
- **Visiting Professor, Chonnam National University Hospital,** 2012 – 2016
- **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

- Awarded the Prime Minister's Commendation at the 55th Science Day (Sensor Intelligence and Machine Learning), Apr. 25th, 2022
- GIST Education Innovation Award 2021
- 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 Pi honor society

International Journal Editorship and Professional Memberships

- Associate Editor for IEEE Transactions on Cybernetics, since 2022 - present
- 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)

Professional Society Activities

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 and 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.

Selected Refereed Journal Articles
[+ Students, Postdoc++, * Corr]

1. S. Kim+, H. Choi+, M. Yoon+ and H.-N. Lee, "VRF-PoW: Proof of Work Consensus With Verifiable Random Function," *IEEE Transactions on Network Science and Engineering*, doi: 10.1109/TNSE.2026.3657405.

2. H. Choi+, S. Kim+, and H.-N. Lee*, "Error-Correction Code Verifiable Computation Consensus," *IEEE Transactions on Information Forensics and Security*, vol.20, pp6678-6692, June 2025. doi: 10.1109/TIFS.2025.3581028. (Press Release (KR))

3. D. S. Bhatti++, J. Lee++, C. Kim, Y. Choi, H. H. Yoon, and H.-N. Lee*, “Deep learning-based single-shot computational spectrometer using multilayer thin films,” *Scientific Reports*, vol.15, p21232, July 2025. doi: 10.1038/s41598-025-06691-6. (Press Release (KR)) (YTN Science 사이다), (YTN News Today), AI Times.
4. Bhatti, D.S.++, Haroon, M.A., Choi, H.+, Heung-No Lee*, “Outage reduction in 5G uplink cooperative NOMA using PSO-optimized relay selection and successive interference cancelation,” *Journal of Wireless Comm. Network,* 47 (2025). https://doi.org/10.1186/s13638-025-02448-x.

5. Rahman S M Wahidur+, Ishmam Tashdeed, Manjit Kaur++, and Heung-No Lee*, “Enhancing Zero-Shot Crypto Sentiment with Fine-tuned Language Model and Prompt Engineering,” *IEEE Access*, vol.12, pp10146-10159, 2024.

6. D. Singh++, M. Kaur+++, J. M. Alanazi, A. A. AlZubi and Heung-No Lee*,"Efficient Evolving Deep Ensemble Medical Image Captioning Network," *IEEE Journal of Biomedical and Health Informatics*, vol.27, Issue 2, pp1016-1025, Feb. 2023.

7. Pal, Hardev Singh, et al. and Heung-No Lee*,"An effective ECG signal compression algorithm with self-controlled reconstruction quality." *Computer Methods in Biomechanics and Biomedical Engineering 27.7, 849-859*, 2024.

8. D. Srivastava, S. S. Singh, B. Rajitha, M. Verma, M. Kaur++ and Heung-No Lee*,"Content-Based Image Retrieval: A Survey on Local and Global Features Selection, Extraction, Representation, and Evaluation Parameters," *IEEE Access*, vol.11, pp95410-95431, 2023.

9. M. Kaur++ et al. and Heung-No Lee*, "EGCrypto: A Low-Complexity Elliptic Galois Cryptography Model for Secure Data Transmission in IoT," *IEEE Access*, vol.11, pp90739-90748, 2023.

10. Kaur, M.++, Singh, D.++, Jabarulla, M.Y.+ et al. and Heung-No Lee*,"Computational deep air quality prediction techniques: a systematic review," *Artif. Intell. Rev*., 56 (Suppl 2), 2053–2098, 2023.

11. M. Kaur++, D. Singh++, V. Kumar and Heung-No Lee*, "MLNet: Metaheuristics-Based Lightweight Deep Learning Network for Cervical Cancer Diagnosis," *IEEE Journal of Biomedical and Health Informatics*, vol.27, Issue 10, pp5004-5014, Oct. 2023.

12. J. Su, Z. Liao, Z. Sheng, A. X. Liu, D. Singh.++ and Heung-No Lee*,"Human Activity Recognition Using Self-Powered Sensors Based on Multilayer Bidirectional Long Short-Term Memory Networks," *IEEE Sensors Journal*, vol.23, Issue 18, pp20633-20641, 15 Sept.15, 2023.

13. Singh, Shashank Sheshar, et al., Dilbag Singh++, and Heung-No Lee*,"Social network analysis: a survey on measure, structure, language information analysis, privacy, and applications," *ACM Transactions on Asian and Low-Resource Language Information Processing 22.5: 1-47*, 2023.

14. Kaushik, Harshit, Dilbag Singh++, M. Kaur++ and Heung-No Lee*,"TomFusioNet: A tomato crop analysis framework for mobile applications using the multi-objective optimization based late fusion of deep models and background elimination," *Applied Soft Computing* 133: 109898, 2023.

15. M. Kaur++, A. A. AlZubi, D. Singh++, V. Kumar and Heung-No Lee*,"*Lightweight Biomedical Image Encryption Approach*," *IEEE Access*, vol.11, pp74048-74057, 2023.

16. Jusung Kang+, Young-Sik Kim, and Heung-No Lee*, "Radio Frequency Public Key Generator for Digital Application," *IEEE Access*, vol.11, Dec. 2023, doi: 10.1109/ACCESS.2023.3340305. (ITRC project), (Impact factor: 3.9, Category: Engineering, Electrical & Electronic, JCI Quartile: Q2, JCI Percentile: 69.12)

17. Heung-No Lee*, Young-Sik Kim, Dilbag Singh++, and Manjit Kaur++, "Green Bitcoin: Global Sound Money," *The Journal of Digital Assets," vol.1*, Issue 1, pp33-47, October, 2022. (The Inaugural Issue of the Journal of Digital Assets, No Impact Factor)

18. Cheolsun Kim+, Pavel Ni+, Kang Ryeol Lee, and Heung-No Lee*, "Mass production-enabled computational spectrometers based on multilayer thin films," *Scientific Reports*, (Impact Factor: 4.380, Category: Multidisciplinary Sciences, JCI Quartile: Q1: JCI Percentile: 85.55, Doyak Project)

19. Kaur, S., Singh, S., Kaur, M.++ and Heung-No Lee*, "A Systematic Review of Computational Image Steganography Approaches," *Arch Computat Methods Eng.*, 4775–4797, 2022.

20. Himthani, V., Dhaka, V.S., Kaur, M.++ and Heung-No Lee*, "Comparative performance assessment of deep learning based image steganography techniques," *Scientific Report*, 12, 16895, 2022.

21. Pallavi, Joshi, S., Singh, D.++ and Heung-No Lee*, "Comprehensive Review of Orthogonal Regression and Its Applications in Different Domains," *Arch. Computat. Methods Eng.,* 29, 4027–4047, 2022.

22. Kumar, A., Kumar, A., Vishwakarma, A., and Heung-No Lee*, "An improved segmentation technique for multilevel thresholding of crop image using cuckoo search algorithm based on recursive minimum cross entropy," *IET Signal Processing, 16(6), 630-649*, 2022.

23. H. Singh, S. Sharma, M. Khurana, M. Kaur++ and Heung-No Lee*,"Binary Drone Squadron Optimization Approaches for Feature Selection," *IEEE Access*, vol.10, pp87099-87114, 2022.

24. S. S. Kushwaha, S. Joshi, D. Singh++, M. Kaur++ and Heung-No Lee*,"Ethereum Smart Contract Analysis Tools: A Systematic Review," *IEEE Access*, vol.10, pp57037-57062, 2022.

25. R. Subramanian, S. Taterh, D. Singh++ and Heung-No Lee*,"Efficient Fine Tuned Trapezoidal Fuzzy-Based Model for Failure Mode Effect Analysis Risk Prioritization," *IEEE Access*, vol.10, pp50037-50046, 2022.

26. D. Singh++, M. Kaur++, V. Kumar, M. Y. Jabarulla+ and Heung-No Lee*,"Artificial Intelligence-Based Cyber-Physical System for Severity Classification of Chikungunya Disease," *IEEE Journal of Translational Engineering in Health and Medicine*, vol.10, pp1-9, 2022.

27. 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*, vol.52, Issue 4, pp2275-2288, April 2022

28. D. Singh++, M. Kaur++, M. Y. Jabarulla+, V. Kumar and Heung-No Lee*, "Evolving Fusion-Based Visibility Restoration Model for Hazy Remote Sensing Images Using Dynamic Differential Evolution," *IEEE Transactions on Geoscience and Remote Sensing*, vol.60, pp1-14, 2022.

29. S. S. Kushwaha, S. Joshi, D. Singh++, M. Kaur++ and Heung-No Lee*,"Systematic Review of Security Vulnerabilities in Ethereum Blockchain Smart Contract," *IEEE Access*, vol.10, pp6605-6621, 2022.

30. A. Kumar, D. Singh++, M. Kaur++ and Heung-No Lee*,"Efficient Stochastic Model for Operational Availability Optimization of Cooling Tower Using Metaheuristic Algorithms," *IEEE Access*, vol.10, pp24659-24677, 2022.

31. B. Mishra et al., D. Singh++, and Heung-No Lee*,"Privacy Protection Framework for Android," *IEEE Access*, vol.10, pp7973-7988, 2022,

32. V. Himthani, V. S. Dhaka, M. Kaur, D. Singh++ and Heung-No Lee*,"Systematic Survey on Visually Meaningful Image Encryption Techniques," *IEEE Access*, vol.10, pp98360-98373, 2022.

33. G. D. Singh, M. Prateek, S. Kumar, M. Verma, D. Singh++ and Heung-No Lee* "Hybrid Genetic Firefly Algorithm-Based Routing Protocol for VANETs," *IEEE Access*, vol.10, pp9142-9151, 2022.

34. Jusung Kang+, Younghak Shin, Hyunku Lee, Jintae Park, and Heung-No Lee*, “Radio Frequency Fingerprinting for Frequency Hopping Emitter Identification,”

Applied Sciences, 11(22), Nov. 2021, doi: 10.3390/app112210812 (LIG Nex1 project), (Impact factor: 2.679, Category: Engineering, Multidisciplinary, JCI Quartile: Q2, JCI Percentile: 67.94)

35. D. Singh++, V. Kumar, M. Kaur++, M. Y. Jabarulla+ and Heung-No Lee*,"Screening of COVID-19 Suspected Subjects Using Multi-Crossover Genetic Algorithm Based Dense Convolutional Neural Network," *in IEEE Access*, vol.9, pp142566-142580, 2021, doi: 10.1109/ACCESS.2021.3120717.

36. Hyoungsung Kim+, Jehyuk Jang+, Sangjun Park+, and Heung-No Lee*, "Error-Correction Code Proof-of-Work on Ethereum," *IEEE Access*, vol.9, pp135942-135952, Sep 2021. doi: 10.1109/ACCESS.2021.3113522. (Impact Factor: 3.367, IITP & Doyak Project) Paper: (Open Access)

37. Jabarulla, Mohamed Yaseen+, and Heung-No Lee*. "A blockchain and artificial intelligence-based, patient-centric healthcare system for combating the COVID-19 pandemic: Opportunities and applications." Healthcare. vol.9. Issue 8. Mdpi, 2021.

38. Haeung Choi+, Sangjun Park+ and Heung-No Lee*, "Covert Anti-Jamming Communication Based on Gaussian Coded Modulation," *Applied Sciences*, 11(9), April 2021, doi: 10.3390/app11093759 (EW33 project), (Impact factor: 2.679, Category: Engineering, Multidisciplinary, JCI Quartile: Q2, JCI Percentile: 67.94)

39. 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, Doyak Project)

40. Nikhil Agrawal, Anil Kumar, B. Kuldeep, S. Lee, and 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, Doyak Project)

41. Mohamed Yaseen Jabarulla+ and Heung-No Lee*, "Blockchain-Based Distributed Patient-Centric Image Management System," *Applied Sciences*, 11(1), 196, Dec. 2020. doi: 10.3390/app11010196. (IF: 2.474, Do-Yak and IITP)

42. Jehyuk Jang+ and Heung-No Lee, "Profitable Double-Spending Attacks," *Applied Sciences*, 10, 8477, Nov. 2020. doi: 10.3390/app10238477. (IF: 2.474, Do-Yak and IITP)

43. 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, Doyak Project)

44. Hyunjun Jung+, Heung-No Lee*, "ECCPoW: Error-Correction Code Based Proof-of-Work for ASIC Resistance," *Symmetry*, June. 2020, vol.12, Issue 6, 988 (impact Factor: 2.143, Doyak Project)

45. 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, Doyak Project)

46. Cheolsun Kim+, Dongju Park+, and Heung-No Lee*, "Compressive sensing spectroscopy using a residual convolutional neural network," *Sensors*, vol.20, Issue 3, Jan. 2020. (Impact Factor: 3.031, Doyak Project)

47. Seungchan Lee+, Younghak Shin+, Anil Kumar, Kiseon Kim, and Heung-No Lee*, "Two-Wired Active Spring-Loaded Dry Electrodes for EEG Measurements," *Sensors*, vol.19, Issue 20, Article 4572, Oct. 2019. (Impact Factor: 3.031, Doyak Project, Brain research project)

48. H. Singh, A. Kumar, L. K. Balyan, and Heung-No Lee*, "Optimally sectioned and successively reconstructed histogram sub-equalization based gamma correction for satellite image enhancement," *Multimedia Tools and Applications*, vol.2019, Issue 78, pp20431-20463, Jul.2019. (Impact Factor: 2.101, Doyak Project)

49. H. Singh, A. Kumar, L. K. Balyan, and Heung-No Lee*, "Fractional Order Integration Based Fusion Model for Piecewise Gamma Correction along with Textural Improvement for Satellite Images," *IEEE Access*. (Impact Factor: 3.244, Doyak Project)

50. 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)

51. 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).

52. 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, pp53-58, Apr. 2019. (Impact Factor: 3.388 Doyak Project)

53. Sangjun Park and Heung-No Lee*, "Fast Mixed Integer Quadratic Programming for Sparse Signal Estimation," *IEEE Access*, Accepted. (Impact Factor: 3.244, Doyak Project)

54. 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)

55. 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)

56. 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, Issue 9, Sep. 2018 Impact Factor: 2.11)

57. 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*, Doyak Project, Brain research project)

58. Mohamed Yaseen Jabarulla+ and Heung-No Lee, "Speckle Reduction on Ultrasound Liver Images Based on a Sparse Representation over a Learned Dictionary," *Applied Sciences*, vol.8, no, 6, pp903, May. 2018. (Impact Factor: 1.689, Doyak Project)

59. Jehyuk Jang+ Sanghun Im, and Heung-No Lee*, "Intentional Aliasing Method to Improve Sub-Nyquist Sampling System," *IEEE Transactions on Signal Processing*, vol.66 (Issue 12), pp3311-3326, Jun. 2018. (Impact Factor: 4.300, Hanwha project)

60. Mohamed Yaseen Jabarulla+ and Heung-No Lee*, "Speckle Reduction on Ultrasound Liver Images Based on a Sparse Representation over a Learned Dictionary," *Applied Sciences*, vol.8 (Issue 6), pp903, May. 2018. (Impact Factor: 1.679, Doyak Project)

61. Woong-Bi Lee+, and Heung-No Lee*, "Depth-estimation-enabled compound eyes," *Optics Communications*, vol.412, pp178-185, Apr. 2018. (Impact Factor: 1.588, Doyak Project)

62. 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, Doyak Project)

63. 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)

64. 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. (Impact Factor: 0.729*, Acknowledgement – None)

65. Muhammad Asif Raza+, Sangjun Park+ and Heung-No Lee*, "Evolutionary Channel Sharing Algorithm for Heterogeneous Unlicensed Networks," *IEEE*

Transactions on Wireless Communications (Early Access). (Impact Factor: 4.951, Doyak Project)

66. 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, Issue 3, pp346-353, May, 2017. (Impact Factor: 1.263, Acknowledgement – None)

67. 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). (Impact Factor: 2.679*, Doyak Project)

68. 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)

69. Zafar Iqbal+, Kiseon Kim, and Heung-No Lee*, "A cooperative wireless sensor network for indoor industrial monitoring," *IEEE Transactions on Industrial Informatics*, vol.13, Issue 2, pp482-491, Apr. 2017. (Impact Factor: 4.708, Doyak Project)

70. 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*,. (Impact Factor: 5.228, Doyak Project)

71. Zafar Iqbal+ and Heung-No Lee*, "Spatially concatenated channel-network code for underwater wireless sensor networks," *IEEE Transactions on Communications*, vol.64, Issue 9, pp3901-3914, Sep. 2016. (Impact Factor: 2.298, Doyak Project)

72. 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, Issue 3, pp2085-2098, Mar. 2017. (Impact Factor: 1.978, Do-Yak)

73. 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, Issue 3, pp2013-2026, Feb. 8, 2016. (Impact Factor: 3.587; Doyak Project)

74. 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, pp155-161, Oct. 2015. (Impact Factor: 1.759, Do-yak project)

75. 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, pp29-38, Nov. 2015. (Impact Factor: 1.240, Do-yak project)

76. 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, pp8-18, Aug. 2015. (Impact Factor: 1.532; Doyak Project)

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