Joongheon Kim

Last update on May 6, 2021

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Vice Director, Korea University – Artificial Intelligence Engineering Research (KU-AIER) Center, Seoul, Republic of Korea
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Positions

Korea University

- ***Associate Professor – Faculty Member (09/2019–):* School of Electrical Engineering**
  – *Director (09/2019–):* Artificial Intelligence and Mobility (AIM) Laboratory
  – *Adjunct Professor (03/2021–):* Department of Semiconductor Engineering
  – *Adjunct Professor (09/2019–):* Department of Electrical and Computer Engineering (Graduate School)
- *Vice Director (10/2019–):* Artificial Intelligence Engineering Research Center
- *Organizing Committee (07/2021–06/2022):* Institute of Data Science (IDS)

Academia

- *Senior Member (2018–)*, **IEEE**
  – *Member:* IEEE Communications Society, IEEE Vehicular Technology Society, etc
- *Life Member (2018–)*, **Korean Institute of Communications and Information Sciences (KICS)**
- *Life Member (2019–)*, **Korean Institute of Information Scientists and Engineers (KIISE)**
- *Associate Editor (2020–)*, **IEEE Transactions on Vehicular Technology**

Educational Backgrounds

- **University of Southern California (USC) – Viterbi School of Engineering**, Los Angeles, California, USA
  – Ph.D. (08/2009–08/2014) in Computer Science (Advisor: *Prof. Andreas F. Molisch*, Department of Electrical Engineering)
  – M.S. (05/2014) in Computer Science with specialization in High Performance Computing and Simulations
  – M.S. (05/2012) in Electrical Engineering
- **Korea University**, Seoul, Republic of Korea
  – M.S. (03/2004–02/2006) in Computer Science and Engineering (Advisor: *Prof. Wonjun Lee*, School of Cybersecurity)
  – B.S. (03/1999–02/2004) in Computer Science and Engineering

Awards and Honors

Research and Academic Excellence (International)

- **Best Paper Award** – *2021 IEEE International Conference on Information Networking (ICOIN)* 01/2021
  "Infrastructure-Assisted Cooperative Multi-UAV Deep Reinforcement Energy Trading Learning for Big-Data Processing"
- **Bronze Paper Award** – *2020 IEEE Seoul Section Student Paper Contest* 12/2020
  "Reliable Offloading Target Selection using Deep Reinforcement Learning for Large Fire Accident"
- **IEEE Systems Journal Best Paper Award (Top 7 among 793 accepted papers in 2019: 0.88%)** – *IEEE Systems Council* 03/2020
  "Towards Characterizing Blockchain-based Cryptocurrencies for Highly-Accurate Predictions"
- **Gold Paper Award** – *2019 IEEE Seoul Section Student Paper Contest* 12/2019
  "Stabilized Super-Resolution Deep Learning Adaptation for UAV-Assisted Mobile Edges: A Lyapunov Optimization Approach"
- **IEEE Vehicular Technology Society (VTS) Seoul Chapter Award** – *2019 IEEE Asia Pacific Wireless Communications Symposium* 08/2019
  "Joint Offloading and Streaming in Mobile Edges: A Deep Reinforcement Learning Approach"
- **Next Generation and Standards (NGS) Division Recognition Award** – *Intel Corporation* Q1/2015
  For developing a 3-dual sector mmWave backhaul link software stack with mesh, relay, and load balancing capability for modular antenna array (MAA) proof-of-concept (POC)
- **Annenberg Graduate Fellowship Award** – *University of Southern California* 02/2009
  Awarded with Ph.D. Admission – 4 Year Full Scholarship ($30,000/year for 4 years, i.e., $120,000)

Research and Academic Excellence (Korea Regional)

- **Encouragement Paper Award** – *2020 KICS Fall Conference* 11/2020
  "UAV Trajectory Optimization via Multi-Agent Deep Reinforcement Learning"
- **Encouragement Paper Award** – *2020 KICS Summer Conference* 08/2020
  "3D Modeling and WebVR Implementation Using Azure Kinect, Open3D, and Three.js"
- **Encouragement Paper Award** – *2020 KICS Winter Conference* 02/2020
  "Quantum Heuristic Solver using QAOA for the Maximum Independent Set Problem"
- **Encouragement Paper Award** – *2020 KICS Winter Conference* 02/2020
  "Multi-Drone Scheduling for High-Reliable and High-Performance UAV-based Surveillance Networking"
- **Outstanding Contribution Award** – *KICS* 11/2019
- **Haedong Young Scholar Award** – *KICS* and *Haedong Foundation* 12/2018
  For recognizing a researcher under the age of 40 who has made outstanding contributions to communication sciences R&D
- **Outstanding Research Paper Award** – *LG Electronics CTO Office, Multimedia Research Laboratory* 01/2008
- **RFID Expert Group President Award** – *The 3rd RFID/USN Research Paper Contest* 10/2007

- **ETRI President Award** – *The 2nd RFID/USN Research Paper Contest* 11/2006
- **Korea Association of RFID/USN (KARUS) President Award** – *The 1st RFID/USN Research Paper Contest* 10/2005
- **Scholarships for Academic Excellence** – *Korea University* Fall 1999, Fall 2000

Teaching and Supervision Excellence

- **Best Teaching Award** – *Korea University* (Computer Language and Laboratory, EGRN151) Fall 2020
- **Granite Tower (Seok-Tap) Best Teaching Award** – *Korea University* (Computer Language and Laboratory, EGRN151) Fall 2019
- **Excellence in Teaching** – *Chung-Ang University* Fall 2018, Fall 2017, Fall 2016
- **Certificate of Achievement (13th Place)** – *ACM International Collegiate Programming Contest (ICPC)* 11/2016

R&D Positions

Full-Time Positions

- **Korea University – College of Engineering**, Seoul, Republic of Korea
  – *Associate Professor (03/2021–)*, School of Electrical Engineering
  – *Adjunct Professor (03/2021–)*, Department of Semiconductor Engineering
  – *Assistant Professor (09/2019–02/2021)*, School of Electrical Engineering
- **Chung-Ang University – College of Computer Science and Software**, Seoul, Republic of Korea
  – *Assistant Professor (03/2016–08/2019)*, School of Computer Science and Engineering
- **Intel Corporation – Platform Engineering Group**, Silicon Valley (Santa Clara), California, USA
  – *Systems Engineer (09/2013–02/2016)*, mmWave Standards and Advanced Technology (mSAT) Team (with Dr. Ali S. Sadri)
- **University of Southern California (USC) – Viterbi School of Engineering**, Los Angeles, California, USA
  – *Annenberg Graduate Fellow (08/2009)*, Awarded with Ph.D. admission from USC (2009)
  – *Ph.D. Research Assistant (01/2011–08/2014)*, Communication Sciences Institute (Advised by Prof. Andreas F. Molisch)
- **InterDigital**, San Diego, California, USA
  – *Intern (05/2012–08/2012)*, Wireless Systems Evolution Department
- **LG Electronics CTO Office**, Seoul, Republic of Korea
  – *Research Engineer (01/2006–08/2009)*, Multimedia Research Laboratory, Seocho R&D Campus
- **Korea University – Department of Computer Science and Engineering**, Seoul, Republic of Korea
  – *M.S. Research/Teaching Assistant (03/2004–02/2006)*, Network Research Laboratory (Advised by Prof. Wonjun Lee)

R&D Projects

University/Center-Level Projects

- **Intelligent 6G Wireless Access System Research Center** 04/2021–12/2025
  Funded by *Institute for Information and Communications Technology Promotion (IITP)* xxx, Grant: $xxx,xxx; Co-PI]
- **Nano UAV Intelligence Systems Research Lab (NUiSRL)** 10/2020–12/2022
  Funded by *Agency for Defense Development (ADD)*
  – **ADD Military Special Research Center**, PI: Kwangwoon University (Korea)
- **5G/Unmanned Vehicle Research Center (5G/UV-RC)** 06/2020–12/2022
  Funded by *Institute for Information and Communications Technology Promotion (IITP)*
  – **University IT Research Center (ITRC)**, PI: Hanyang University (Korea)
- **Human Resource Development for the Biomedical Unstructured Big Data Analysis** 08/2018–12/2021
  Funded by *Institute for Information and Communications Technology Promotion (IITP)* [2018-0-01833; Co-PI]
  – **University IT Research Center (ITRC)**, PI: Seoul National University Hospital (Korea)
- **Intelligent Internet of Energy (IoE) Data Research Center** 02/2020–05/2020
  Funded by *Institute for Information and Communications Technology Promotion (IITP)*
  – **University IT Research Center (ITRC)**, PI: Kookmin University (Korea)

Government-Funded Projects

- **K-Starlink: Dynamic Reconfigurable and Intelligent Space-Terrestrial Networks** 06/2021–05/2024
  Funded by *National Research Foundation of Korea* **(Basic Research Lab)** [xxx, Grant: $xxx,xxx; Co-PI]
- **Integrated Perception Technology Developments for Public Safety Platforms** 06/2019–05/2023
  Funded by *National Research Foundation of Korea* [2019M3E3A1084054, Grant: $400,000; Co-PI]
- **Development of Quantum Deep Reinforcement Learning Algorithm using QAOA** 10/2019–04/2022
  Funded by *Ministry of Science and ICT* [2019M3E4A1080391, Grant: $258,500; Primary-PI]
- **Distributed Secure Platform for Scalable Clinical OMOP CDM Models** 04/2019–03/2022
  Funded by *Ministry of Health and Welfare* [HI19C0572, Grant: $90,000; Co-PI]
- **mmWave Radar and Deep Reinforcement Learning based Optimal Policy Autonomous Driving** 06/2019–02/2022
  Funded by *National Research Foundation of Korea* [2019R1A2C4070663, Grant: $275,000; Primary-PI]
- **Development of Privacy-Reinforcing Distributed Transfer-Iterative Learning Algorithm** 07/2019–12/2021
  Funded by *Ministry of Health and Welfare* [HI19C0842, Grant: $150,000; Co-PI]
- **Virtual Presence in Moving Objects through 5G (PriMO-5G)** 06/2018–05/2021
  Funded by *Institute for Information and Communications Technology Promotion (IITP)* [2018-0-00170, Grant: $246,464; Co-PI]
- **Network Engineering: Development and Application of Novel Data Science Driven Framework for Efficient Network Design** 06/2017–05/2020
  Funded by *National Research Foundation of Korea* **(Basic Research Lab)** [2017R1A4A1015675, Grant: $150,000; Co-PI]
- **mmWave High-Speed Networking Platform Design for Next-Generation Convergence Services** 06/2016–05/2019
  Funded by *National Research Foundation of Korea* [2016R1C1B1015406, Grant: $150,000; Primary-PI]
  – Selected as **Initial Innovation Lab** [Grant: $60,000]

- **Feasibility Study of 60 GHz IEEE 802.11ad for Virtual Reality (VR) Platforms** 04/2017–12/2017
  Funded by *Institute for Information and Communications Technology Promotion (IITP)* [Grant: $33,333; Primary-PI]

Industry-Funded Projects

- **Mapping between Real World and Virtual Reality (VR) for End-Edged Cloud Real-Time VR Servers** 09/2020–09/2021
  Funded by *Samsung Electroncis – Samsung Advanced Institute of Technology* [Grant: $71,500; Primary-PI]
- **Super-Resolution Performance Optimization in Mobile Platforms** 05/2020–08/2020
  Funded by *Samsung SDS* [Grant: $15,000; Primary-PI]
- **Deep Learning Algorithms for mVOC Concentration Analysis** 03/2020–06/2020
  Funded by *Samsung Electronics* [Grant: $12,000; Primary-PI]
- **Visual Recognition Software Implementation using Deep Learning Tools** 05/2019–11/2019
  Funded by *Hyundai NGV* and *Hyundai/Kia Motors Company* [Grant: $59,500; Primary-PI]
- **A Priori Techniques Research for Efficient Multi-Edge Computing** 06/2017–12/2017
  Funded by *Samsung Electronics Software Center* [Grant: $80,000; Co-PI]

Government-Funded Research Institute Projects

- **Research on Intelligent Agent-based CPS Security and Reliability** 05/2021–11/2021
  Funded by *Telecommunications Technology Association (TTA)* [xxx, Grant: $50,000; Primary-PI]
- **Multi-GPU based Automotive HPC Platform Development** 04/2020–10/2020
  (A Development of Driving Decision Engine for Autonomous Driving using Driving Experience Information)
  Funded by *Electronics and Telecommunications Research Institute* [19HS2720 (IITP 2017-0-00068), Grant: $20,000; Primary-PI]
- **Cooperative Deep Reinforcement Learning for Online Game Multi-Agents** 04/2020–08/2020
  (Human-Agent Cooperation Algorithm Design in Multi-Agent Environment)
  Funded by *Electronics and Telecommunications Research Institute* [19YE1400, Grant: $28,000; Primary-PI]
- **Verification Testbed Implementation for Privacy-Preserving Trust Data Generation** 10/2019–11/2019
  Funded by *Electronics and Telecommunications Research Institute* [Grant: $44,000; Co-PI]
- **Measurement and Analysis of Multi-Task GPU Scheduling Delays** 05/2019–10/2019
  (A Development of Driving Decision Engine for Autonomous Driving using Driving Experience Information)
  Funded by *Electronics and Telecommunications Research Institute* [19HS2720 (IITP 2017-0-00068), Grant: $40,000; Primary-PI]
- **Probabilistic Decision Making and Econometric Methods for Micro-Grid** 05/2017–04/2019
  Funded by *Korea Electric Power Corporation (KEPCO) Research Institute* [R17XA05-41, Grant: $143,128; Primary-PI]
- **GPU Scheduling Performance Analysis under Queueing Delay Considerations** 05/2018–10/2018
  (A Development of Driving Decision Engine for Autonomous Driving using Driving Experience Information)
  Funded by *Electronics and Telecommunications Research Institute* [18HS1420 (IITP 2017-0-00068), Grant: $40,000; Primary-PI]
- **Improving Massive Deep Learning Training via Computation and Communication Acceleration** 04/2018–10/2018
  (Development of HPC System for Accelerating Large-Scale Deep Learning)
  Funded by *Electronics and Telecommunications Research Institute* [18HS1710 (IITP 2016-0-00087), Grant: $30,000; Primary-PI]
- **Parsing Techniques for Artificial Neural Network (ANN) Data Processing** 09/2017–11/2017
  (A Development of Driving Decision Engine for Autonomous Driving using Driving Experience Information)
  Funded by *Electronics and Telecommunications Research Institute* [17HS2720 (IITP 2017-0-00068), Grant: $40,000; Primary-PI]

University of Southern California (USC) – Viterbi School of Engineering (Ph.D. Research Projects)

- **Video Aware Wireless Networks (VAWN) Research Program**
  Funded by *Intel Labs*, *Verizon Wireless*, and *Cisco Systems*; Under the guidance of Prof. Andreas F. Molisch (University of Southern California, USA) and Prof. Giuseppe Caire (Technische Universität Berlin, Germany)
- **60 GHz Real-Time Wireless Video Broadcasting**
  Supported by a Gift from *Disney Research Zürich*; Under the guidance of Prof. Andreas F. Molisch (University of Southern California, USA), Prof. Yafei Tian (Beihang Univ, China), and Dr. Stefan Mangold (Disney Research Zürich, Switzerland)

Selected Publications

- Citation: 4328+, H-Index: 28+, i10-Index: 112+; obtained from Google Scholar Profile (as of May 6, 2021)

Dissertation, Books, and Book Chapters

Ph.D. Dissertation

- *Elements of Next-Generation Wireless Video Systems: Millimeter-Wave and Device-to-Device Algorithms*, Ph.D. Dissertation (Computer Science), University of Southern California, Los Angeles, California, USA, August 2014.

Book Chapters

- Deep Learning Recipes for Connected and Autonomous Vehicles (CAV) Coordination and Control, *Deep Learning and Its Applications for Vehicle Networks*, CRC Press Taylor and Francis Group, Month Year. (Editor: F. Hu) (w/ S. Jung)
- Stochastic Decision Making under Uncertainty using Deep Learning, *Decision Making*, IntechOpen, Month Year., (Editor: F.P.G. Márquez) (w/ S. Jung)
- Dynamic Decision-Making for Stabilized Deep Learning Software Platforms, *Advances and Applications in Deep Learning*, IntechOpen, September 2020., (Editor: M.A. Aceves-Fernandez) (w/ S. Park, D. Kim)
- Device-to-Device Communications, *Towards 5G: Applications, Requirements and Candidate Technologies*, Wiley, January 2017., (Editors: R. Vannithamby, S. Talwar) (w/ A.F. Molisch, M. Ji, D. Burghal, A.S. Tehrani)
- Millimeter-Wave (mmWave) Medium Access Control: A Survey, *Opportunities in 5G Networks: A Research and Development Perspective*, CRC Press Taylor and Francis Group, April 2016., (Editor: F. Hu)

- Millimeter-Wave (mmWave) Radio Propagation Characteristics, *Opportunities in 5G Networks: A Research and Development Perspective*, CRC Press Taylor and Francis Group, April 2016., (Editor: F. Hu)
- Weighted Localized Clustering: A Coverage-Aware Reader Collision Arbitration Protocol in RFID Networks, *Handbook on Mobile and Ubiquitous Computing: Status and Perspective*, CRC Press Taylor and Francis Group, October 2012., (Editors: L.T. Yang, E. Syukur, S.W. Loke) (w/ E. Kim, W. Lee, D. Kim, J. Choi, J. Jung, C.K. Shin)
- Coverage-Time Optimized Dynamic Clustering for Two-Tiered WM2Nets, *Wireless Mesh Networking*, McGraw-Hill, August 2008., (Editor: G. Aggelou) (w/ W. Lee, E. Kim, T.K. Shih)

Magazines and Journals, *97 publications*

■ IEEE, *56 publications*

[Access.major] Millimeter-Wave Beam Trading for Smart Ocean IoT Networks via Learning-Assisted Auction, *IEEE Access*, v(n):ppp–ppp, Month Year. (S. Jung, M. Shin, J. Kim, W. Lee)

[TITS.major] Self-Configurable Stabilized Real-Time Detection Learning for Autonomous Driving Applications, *IEEE Transactions on Intelligent Transportation Systems*, v(n):ppp–ppp, Month Year. (W.J. Yun, S. Park, J. Kim, D. Mohaisen)

[TVT.major] Quality-Aware Deep Reinforcement Learning for Streaming in Infrastructure-Assisted Connected Vehicles, *IEEE Transactions on Vehicular Technology*, v(n):ppp–ppp, Month Year. (W.J. Yun, D. Kwon, M. Choi, J. Kim, G. Caire, A.F. Molisch)

[TVT.major] Infrastructure-Assisted On-Driving Experience Sharing for Millimeter-Wave Connected Vehicles, *IEEE Transactions on Vehicular Technology*, v(n):ppp–ppp, Month Year. (S. Jung, J. Kim, M. Levorato, C. Cordeiro, J.-H. Kim)

[ISJ.minor] Securing Heterogeneous IoT with Intelligent DDoS Attack Behavior Learning, *IEEE Systems Journal*, v(n):ppp–ppp, Month Year. (N.-N. Dao, T. Phan, U. Sa'ad, J. Kim, T. Bauschert, D.-T. Do, S. Cho)

[TMC.accept] Supremo: Cloud-Assisted Low-Latency Super-Resolution in Mobile Devices, *IEEE Transactions on Mobile Computing*, v(n):ppp–ppp, Month Year. (J. Yi, S. Kim, J. Kim, S. Choi)

[ISJ.accept] LiteZKP: Lightening Zero-Knowledge Proof-based Blockchains for IoT and Edge Platforms, *IEEE Systems Journal*, v(n):ppp–ppp, Month Year. (E. Boo, J. Kim, J. Ko)

[ISJ.accept] Intelligent Active Queue Management for Stabilized QoS Guarantees in 5G Mobile Networks, *IEEE Systems Journal*, 15(2):ppp–ppp, June 2021. (S. Jung, J. Kim, J.-H. Kim)

[TMC'21.06] A Personalized Preference Learning Framework for Caching in Mobile Networks, *IEEE Transactions on Mobile Computing*, 20(6):2124–2139, June 2021. (A. Malik, K.S. Kim, J. Kim, W.-Y. Shin)

[PIEEE'21.05] Communication-Efficient and Distributed Learning Over Wireless Networks: Principles and Applications, *Proceedings of the IEEE*, 109(5):796–819, May 2021. (J. Park, S. Samarakoon, A. Elgabli, J. Kim, M. Bennis, S.-L. Kim, M. Debbah)

[TVT'21.05] Orchestrated Scheduling and Multi-Agent Deep Reinforcement Learning for Cloud-Assisted Multi-UAV Charging Systems, *IEEE Transactions on Vehicular Technology*, 70(5):ppp–ppp, May 2021. (S. Jung, W.J. Yun, M. Shin, J. Kim, J.-H. Kim)

[TWC'21.04] Probabilistic Caching and Dynamic Delivery Policies for Categorized Contents and Consecutive User Demands, *IEEE Transactions on Wireless Communications*, 20(4):2685–2699, April 2021. (M. Choi, A.F. Molisch, D.-J. Han, D. Kim, J. Kim, J. Moon)

[JCN'21.04] Stabilized Adaptive Sampling Control for Reliable Real-Time Learning-based Surveillance Systems, *Journal of Communications and Networks*, 23(2):128–136, April 2021. (D. Kim, S. Park, J. Kim, J.y. Bang, S. Jung)

[JCN'21.04] Dynamic Video Delivery using Deep Reinforcement Learning for Device-to-Device Underlaid Cache-Enabled Internet-of-Vehicle Networks, *Journal of Communications and Networks*, 23(2):116–127, April 2021. (M. Choi, M. Shin, J. Kim)

[ISJ'21.03] Multiscale LSTM-Based Deep Learning for Very-Short-Term Photovoltaic Power Generation Forecasting in Smart City Energy Management, *IEEE Systems Journal*, 15(1):346–354, March 2021. (D. Kim, D. Kwon, L. Park, J. Kim, S. Cho)

[TWC'20.12] Joint Distributed Link Scheduling and Power Allocation for Content Delivery in Wireless Caching Networks, *IEEE Transactions on Wireless Communications*, 19(12):7810–7824, December 2020. (M. Choi, A.F. Molisch, J. Kim)

[IOTJ'20.10] Multiagent DDPG-Based Deep Learning for Smart Ocean Federated Learning IoT Networks, *IEEE Internet of Things Journal*, 7(10):9895–9903, October 2020. (D. Kwon, J. Jeon, S. Park, J. Kim, S. Cho)

[JCN'20.08] Self-Adaptive Power Control with Deep Reinforcement Learning for Millimeter-Wave Internet-of-Vehicles Video Caching, *Journal of Communications and Networks*, 22(4):326–337, August 2020. (D. Kwon, J. Kim, D. Mohaisen, W. Lee)

[Access'20.06] Blind Signal Classification Analysis and Impact on User Pairing and Power Allocation in Nonorthogonal Multiple Access, *IEEE Access*, 8:100916–100929, June 2020. (M. Choi, J. Kim)

[TII'20.05] Cooperative Management for PV/ESS-Enabled Electric-Vehicle Charging Stations: A Multiagent Deep Reinforcement Learning Approach, *IEEE Transactions on Industrial Informatics*, 16(5):3493–3503, May 2020. (M. Shin, D.-H. Choi, J. Kim)

[ISJ'20.03] Towards Characterizing Blockchain-based Cryptocurrencies for Highly-Accurate Predictions, *IEEE Systems Journal*, 14(1):321–332, March 2020. (M. Saad, J. Choi, D. Nyang, J. Kim, A. Mohaisen), ***(IEEE Systems Journal Best Paper Award, Top 7 among 793 accepted papers in 2019: 0.88%)***

[JCN'20.02] Numerical Approximation of Millimeter-Wave Frequency Sharing between Cellular Systems and Fixed Service Systems, *Journal of Communications and Networks*, 22(1):37–45, February 2020. (S. Han, J.-W. Choi, J. Kim)

[TWC'19.12] Markov Decision Policies for Dynamic Video Delivery in Wireless Caching Networks, *IEEE Transactions on Wireless Communications*, 18(12):5705–5718, December 2019. (M. Choi, A. No, M. Ji, J. Kim)

[TWC'19.10] Dynamic Power Allocation and User Scheduling for Power-Efficient and Delay-Constrained Multiple Access Networks, *IEEE Transactions on Wireless Communications*, 18(10):4846–4858, October 2019. (M. Choi, J. Kim, J. Moon)

[IOTJ'19.10] Two-Stage IoT Device Scheduling with Dynamic Programming for Energy Internet Systems, *IEEE Internet of Things Journal*, 6(5):8782–8791, October 2019. (L. Park, C. Lee, J. Kim, A. Mohaisen, S. Cho)

[TVT'19.10] Blind Signal Classification for Non-Orthogonal Multiple Access in Vehicular Networks, *IEEE Transactions on Vehicular Technology*, 68(10):9722–9734, October 2019. (M. Choi, D. Yoon, J. Kim)

[TCAD'19.09] TEI-ULP: Exploiting Body Biasing to Improve the TEI-Aware Ultra-Low Power Methods, *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, 38(9):1758–1770, September 2019. (W. Lee, T. Kang, J.-J. Lee, K. Han, J. Kim, M. Pedram)

[TMC'19.07] Seamless Dynamic Adaptive Streaming in LTE/Wi-Fi Integrated Network under Smartphone Resource Constraints, *IEEE Transactions on Mobile Computing*, 18(7):1647–1660, July 2019. (J. Koo, J. Yi, J. Kim, M.A. Hoque, S. Choi)

[TVT'19.05] Auction-Based Charging Scheduling With Deep Learning Framework for Multi-Drone Networks, *IEEE Transactions on Vehicular Technology*, 68(5):4235–4248, May 2019. (M. Shin, J. Kim, M. Levorato)

[CM'19.03] New Challenges of Wireless Power Transfer and Secured Billing for Internet of Electric Vehicles, *IEEE Communications Magazine*, 57(3):118–124, March 2019. (L. Park, S. Jeong, D.S. Lakew, J. Kim, S. Cho)

[TIE'19.02] Joint Geometric Unsupervised Learning and Truthful Auction for Local Energy Market, *IEEE Transactions on Industrial Electronics*, 66(2):1499–1508, February 2019. (L. Park, S. Jeong, J. Kim, S. Cho)

[IOTJ'18.12] Internet of Things for Smart Manufacturing System: Trust Issues in Resource Allocation, *IEEE Internet of Things Journal*, 5(6):4418–4427, December 2018. (S. Jeong, W. Na, J. Kim, S. Cho)

[JSAC'18.11] SGCO: Stabilized Green Crosshaul Orchestration for Dense IoT Offloading Services, *IEEE Journal on Selected Areas in Communications*, 36(11):2538–2548, November 2018. (N.-N. Dao, D.-N. Vu, W. Na, J. Kim, S. Cho)

[JSAC'18.06] Wireless Video Caching and Dynamic Streaming under Differentiated Quality Requirements, *IEEE Journal on Selected Areas in Communications*, 36(6):1245–1257, June 2018. (M. Choi, J. Kim, J. Moon)

[Access'18.05] Soft Memory Box: A Virtual Shared Memory Framework for Fast Deep Neural Network Training in Distributed High Performance Computing, *IEEE Access*, 6:26493–26504, May 2018. (S. Ahn, J. Kim, E. Lim, S. Kang)

[TVT'18.04] Adaptive Detector Selection for Queue-Stable Word Error Rate Minimization in Connected Vehicle Receiver Design, *IEEE Transactions on Vehicular Technology*, 67(4):3635–3639, April 2018. (M. Choi, J. Kim, J. Moon)

[IOTJ'18.02] Energy-Efficient Mobile Charging for Wireless Power Transfer in Internet of Things Networks, *IEEE Internet of Things Journal*, 5(1):79–92, February 2018. (W. Na, J. Park, C. Lee, K. Park, J. Kim, S. Cho)

[TII'17.12] Residential Demand Response for Renewable Energy Resources in Smart Grid Systems, *IEEE Transactions on Industrial Informatics*, 13(6):3165–3173, December 2017. (L. Park, Y. Jang, S. Cho, J. Kim)

[IOTJ'17.10] Feasibility Study of 60 GHz Millimeter-Wave Technologies for Hyperconnected Fog Computing Applications, *IEEE Internet of Things Journal*, 4(5):1165–1173, October 2017. (J. Kim, W. Lee)

[Access'17.09] A Software-based Monitoring Framework for Time-Space Partitioned Avionics Systems, *IEEE Access*, 5:19132–19143, September 2017. (C. Shin, C. Lim, J. Kim, H. Roh, W. Lee)

[Access'17.08] Energy-Efficient Stabilized Automatic Control for Multicore Baseband in Millimeter-Wave Systems, *IEEE Access*, 5:16584–16591, August 2017. (J. Kim, J.-J. Lee, J.-K. Kim, W. Lee)

[Access'17.06] Adaptive Resource Balancing for Serviceability Maximization in Fog Radio Access Networks, *IEEE Access*, 5:14548–14559, June 2017. (N.-N. Dao, J. Lee, D.-N. Vu, J. Paek, J. Kim, S. Cho, K. Chung, C. Keum)

[VTM'17.03] The Useful Impact of Carrier Aggregation: A Measurement Study in South Korea for Commercial LTE-Advanced Networks, *IEEE Vehicular Technology Magazine*, 12(1):55–62, March 2017. (S. Lee, S. Hyeon, J. Kim, H. Roh, W. Lee)

[TVT'16.12] Performance of Video Streaming in Infrastructure-to-Vehicle Telematic Platforms With 60-GHz Radiation and IEEE 802.11ad Baseband, *IEEE Transactions on Vehicular Technology*, 65(12):10111–10115, December 2016. (J. Kim, S.-C. Kwon, G. Choi)

[Access'16.12] Numerical Simulation Study for Frequency Sharing between Micro-Cellular Systems and Fixed Service Systems in Millimeter-Wave Bands, *IEEE Access*, 4:9847–9859, December 2016. (J. Kim, L. Xian, A.S. Sadri)

[TON'16.08] Quality-Aware Streaming and Scheduling for Device-to-Device Video Delivery, *IEEE/ACM Transactions on Networking*, 24(4):2319–2331, August 2016. (J. Kim, G. Caire, A.F. Molisch), ***(Selected as one of Best Reading Papers in Device-to-Device Communications by IEEE Communications Society)***, ***(Citations: 100+)***

[TII'15.12] Energy-Efficient Dynamic Packet Downloading for Medical IoT Platforms, *IEEE Transactions on Industrial Informatics*, 11(6):1653–1659, December 2015. (J. Kim)

[TSMC'15.11] Stochastic Decision Making for Adaptive Crowdsourcing in Medical Big-Data Platforms, *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, 45(11):1471–1476, November 2015. (J. Kim, W. Lee)

[JCN'14.10] Fast Millimeter-Wave Beam Training with Receive Beamforming, *Journal of Communications and Networks*, 16(5):512–522, October 2014. (J. Kim, A.F. Molisch)

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[CL'14.03] Fast and Low-Power Link Setup for IEEE 802.15.3c Multi-Gigabit/s Wireless Sensor Networks, *IEEE Communications Letters*, 18(3):455–458, March 2014. (J. Kim, A. Mohaisen, J.-K. Kim)

[TBC'13.09] Joint Scalable Coding and Routing for 60 GHz Real-Time Live HD Video Streaming Applications, *IEEE Transactions on Broadcasting*, 59(3):500–512, September 2013. (J. Kim, Y. Tian, S. Mangold, A.F. Molisch)

[TCE'07.11] Movement-Aware Vertical Handoff of WLAN and Mobile WiMAX for Seamless Ubiquitous Access, *IEEE Transactions on Consumer Electronics*, 53(4):1268–1275, November 2007. (W. Lee, E. Kim, J. Kim, I. Lee, C. Lee), ***(Citations: 100+)***

[TCE'07.05] Coverage-Time Optimized Dynamic Clustering of Networked Sensors for Pervasive Home Networking, *IEEE Transactions on Consumer Electronics*, 53(2):433–441, May 2007. (J. Kim, W. Lee, E. Kim, D.-W. Kim, H. Kim)

[CL'07.01] Optimized Transmission Power Control of Interrogators for Collision Arbitration in UHF RFID Systems, *IEEE Communications Letters*, 11(1):22–24, January 2007. (J. Kim, W. Lee, E. Kim, D. Kim, K. Suh)

■ **non-IEEE,** ***41 publications***

[ICTE'21.m] Truthful Electric Vehicle Charging via Neural-Architectural Myerson Auction, *ICT Express*, 7(n):ppp–ppp (2021). (w/ H. Lee, S. Jung)

[IET'21.m] Empirically Comparing the Performance of Blockchain's Consensus Algorithms, *IET Blockchain*, v(n):ppp–ppp (2021). (w/ A. Ahmad, A. Alabduljabbar, M. Saad, D. Nyang, D. Mohaisen)

[Electronics'21.04] Multi-behavior with Bottleneck Features LSTM for Load Forecasting in Building Energy Management System, *Electronics*, 10(9):1026 (2021). (w/ V. Bui, N.T. Le, V.H. Nguyen, Y.M. Jang)

[JNCA'21.04] Contra-*: Mechanisms for Countering Spam Attacks on Blockchain's Memory Pools, *Journal of Network and Computer Applications*, 179:102971 (2021). (w/ M. Saad, D. Nyang, D. Mohaisen)

[ICTE'21.03] Distributed Deep Reinforcement Learning for Autonomous Aerial eVTOL Mobility in Drone Taxi Applications, *ICT Express*, 7(1):1–4 (2021). (w/ W.J. Yun, S. Jung, J.-H. Kim)

[Electronics'21.02] Coordinated Multi-Agent Deep Reinforcement Learning for Energy-Aware UAV-based Big-Data Platforms, *Electronics*, 10(5):543 (2021). (w/ S. Jung, W.J. Yun, J.-H. Kim)

[Sensors'21.02] Large-Scale Water Quality Prediction Using Federated Sensing and Learning: A Case Study with Real-World Sensing Big-Data, *Sensors*, 21(4):1462 (2021). (w/ S. Park, S. Jung, H. Lee, J.-H. Kim)

[Electronics'20.10] Energy-Efficient Cluster Head Selection via Quantum Approximate Optimization, *Electronics*, 9(10):1669 (2020). (w/ J. Choi, S. Oh)
[AppSci'20.10] Quantum Approximation for Wireless Scheduling, *Applied Sciences*, 10(20):7116 (2020). (w/ J. Choi, S. Oh)
[Sustain'20.10] Faster Data Forwarding in Content-Centric Network via Overlaid Packet Authentication Architecture, *Sustainability*, 12(20):8746 (2020). (w/ T.-Y. Youn, D. Mohaisen, S. Seo)
[Electronics'20.09] Joint Message-Passing and Convex Optimization Framework for Energy-Efficient Surveillance UAV Scheduling, *Electronics*, 9(9):1475 (2020). (w/ S. Jung, J.-H. Kim)
[Electronics'20.08] Optimal User Selection for High-Performance and Stabilized Energy-Efficient Federated Learning Platforms, *Electronics*, 9(9):1359 (2020). (w/ J. Jeon, S. Park, M. Choi, Y.-B. Kwon, S. Cho)
[EAI'20.06] Self-Controllable Super-Resolution Deep Learning Framework for Surveillance Drones in Security Applications, *EAI Endorsed Transactions on Security and Safety*, 7(23):e5 (2020). (w/ S. Park, Y. Kang, J. Park)
[ETRI'20.04] Simulation and Measurement: Feasibility Study of Tactile Internet Applications for mmWave Virtual Reality, *ETRI Journal*, 42(2):163–174 (2020). (w/ W. Na, N.-N. Dao, E.-S. Ryu, S. Cho)
[AppSci'20.03] Weather-Aware Long-Range Traffic Forecast Using Multi-Module Deep Neural Network, *Applied Sciences*, 10(6):1938 (2020). (w/ S. Ryu, D. Kim)
[AppSci'20.03] Adaptive Real-Time Offloading Decision Making for Mobile Edges: Deep Reinforcement Learning Framework and Simulation Results, *Applied Sciences*, 10(5):1663 (2020). (w/ S. Park, D. Kwon, Y.K. Lee, S. Cho)
[JAIHC'20.01] A Novel Network Virtualization based on Data Analytics in Connected Environment, *Journal of Ambient Intelligence and Humanized Computing*, 11(1):75–86 (2020). (w/ K.-H.N. Bui, S. Cho, J.J. Jung, O.-J. Lee, W. Na)
[WPC'19.08] Semantic Hashtag Relation Classification Using Co-occurrence Word Information, *Wireless Personal Communications*, 107(3):1355–1365 (2019). (w/ S. Seo, J.-K. Kim, S.-I. Kim, J. Kim)
[AppSci'19.06] Personalized Online Live Video Streaming using Softmax-based Multinomial Classification, *Applied Sciences*, 9(11):2297 (2019). (w/ K. Kim, D. Kwon, A. Mohaisen)
[FGCS'19.04] Resource-Aware Relay Selection for Inter-Cell Interference Avoidance in 5G Heterogeneous Network for Internet of Things Systems, *Future Generation Computer Systems*, 93:877–887 (2019). (w/ N.-N. Dao, M. Park, J.Paek, S. Cho)
[TETT'19.04] Thriving on Chaos: Proactive Detection of Command and Control Domains in Internet of Things-Scale Botnets using DRIFT, *Wiley Transactions on Emerging Telecommunications Technologies*, 30(4):e3505 (2019). (w/ J. Spaulding, J. Park, D. Nyang, A. Mohaisen)
[EAI'18.12] Network-based Analysis and Classification of Malware using Behavioral Artifacts Ordering, *EAI Endorsed Transactions on Security and Safety*, 5(16):e2 (2018). (w/ A. Mohaisen, O. Alrawi, J. Park, D. Nyang, M. Mohaisen)
[Sensors'18.10] Interference-Aware Adaptive Beam Alignment for Hyper-Dense IEEE 802.11ax Internet-of-Things Networks, *Sensors*, 18(10):3364 (2018). (w/ D. Kwon, S.-W. Kim, A. Mohaisen)
[RTIP'17.09] QoS Optimal Real-Time Video Streaming in Distributed Wireless Image-Sensing Platforms, *Journal of Real-Time Image Processing*, 13(3):547–556 (2017). (w/ E.-S. Ryu)
[Energies'17.09] A High-Efficient Low-Cost Converter for Capacitive Wireless Power Transfer Systems, *Energies*, 10(9):1437 (2017). (w/ I.-O. Lee, W. Lee)
[PLOS'17.08] Adaptive MCS Selection and Resource Planning for Energy-Efficient Communication in LTE-M based IoT Sensing Platform, *PLoS ONE*, 12(8):e0182527 (2017). (w/ N.-N. Dao, M. Park, S. Cho)
[IJDSN'17.08] Distributed and Reliable Decision-Making for Cloud-Enabled Mobile Service Platforms, *International Journal of Distributed Sensor Networks*, 13(8):1–9 (2017). (w/ A. Mohaisen)
[IJAP'17.06] 60 GHz Modular Antenna Array (MAA) Link Budget Estimation with WiGig Baseband and Millimeter-Wave Specific Attenuation, *International Journal of Antennas and Propagation*, 9073465 (2017). (w/ L. Xian, A.S. Sadri)
[MIS'17.03] Strategic Control of 60 GHz Millimeter-Wave High-Speed Wireless Links for Distributed Virtual Reality Platforms, *Mobile Information Systems*, 5040347 (2017). (w/ J.-J. Lee, W. Lee)
[IJAP'16.12] Enhanced Next Generation Millimeter-Wave Multicarrier System with Generalized Frequency Division Multiplexing, *International Journal of Antennas and Propagation*, 9269567 (2016). (w/ H. Shimodaira, A.S. Sadri)
[PLOS'16.12] Achievable Rate Estimation of IEEE 802.11ad Visual Big-Data Uplink Access in Cloud-Enabled Surveillance Applications, *PLoS ONE*, 11(12):e0167447 (2016). (w/ J.-K. Kim)
[RTIP'16.08] Stochastic Stable Buffer Control for Quality-Adaptive HEVC Video Transmission in Enterprise WLAN Architectures, *Journal of Real-Time Image Processing*, 12(2):465–471 (2016). (w/ E.-S. Ryu)
[PLOS'16.08] Adaptive Suspicious Prevention for Defending DoS Attacks in SDN-based Convergent Networks, *PLoS ONE*, 11(8):e0160375 (2016). (w/ N.-N. Dao, M. Park, S. Cho)
[MTAP'15.10] Interference Impacts on 60 GHz Real-Time Online Video Streaming in Wireless Smart TV Platforms, *Multimedia Tools and Applications*, 74(19):8613–8629 (2015). (w/ S.-N. Hong)
[IJEC'15.07] Error Concealment Mode Signaling for Robust Mobile Video Transmission, *International Journal of Electronics and Communications*, 69(7):1070–1073 (2015). (w/ E.-S. Ryu)
[TS'15.05] Dynamic Two-Stage Beam Training for Energy-Efficient Millimeter-Wave 5G Cellular Systems, *Telecommunication Systems*, 59(1):111–122 (2015). (w/ S.-N. Hong)
[CAEE'15.04] Adaptive Buffer Control for Distributed Autonomous Robust Routing in Mobile Surveillance Robots, *Computers and Electrical Engineering*, 43:306–316 (2015). (w/ S.-N. Hong)
[EL'14.10] Quality of Video Streaming in 38 GHz Millimetre-Wave Heterogeneous Cellular Networks, *IET Electronics Letters*, 50(21):1526–1528 (2014). (w/ E.-S. Ryu)
[IJDSN'14.03] Quality Analysis of Massive High-Definition Video Streaming in Two-Tiered Embedded Camera-Sensing Systems, *International Journal of Distributed Sensor Networks*, 634191 (2014). (w/ E.-S. Ryu)
[SCR'13.12] The Sybil Attacks and Defenses: A Survey, *Smart Computing Review*, 3(6):480–489 (2013). (w/ A. Mohaisen)
[EL'13.02] Distributed Stochastic Buffering for Enterprise WLAN Architectures, *IET Electronics Letters*, 49(4):302–304 (2013). (w/ E.-S. Ryu)

Conference and R&D Event Contributions (Selected)

■ Top-Tier Conference Contributions (Full Papers)

[ICDCS'20] Understanding the Potential Risks of Sharing Elevation Information on Fitness Applications (Ü. Meteriz, N.F. Yildiran, J. Kim, D. Mohaisen), **(17.98% (105/584))**
[IJCAI'19] Randomized Adversarial Imitation Learning for Autonomous Driving (M. Shin, J. Kim), **(17.89% (850/4752))**

[ICDCS'18] ShmCaffe: A Distributed Deep Learning Platform with Shared Memory Buffer for HPC Architecture (S. Ahn, J. Kim, E. Lim, W. Choi, A. Mohaisen, S. Kang), **(20.63% (78/378))**

[MM'17] REQUEST: Seamless Dynamic Adaptive Streaming over HTTP for Multi-Homed Smartphone under Resource Constraints (J. Koo, J. Yi, J. Kim, M.A. Hoque, S. Choi), **(27.63% (189/684))**

[MobiSys'10] Energy-Efficient Rate-Adaptive GPS-based Positioning for Smartphones (J. Paek, J. Kim, R. Govindan), **(19.84% (25/126))**, ***(Citations: 600+)***

■ IEEE/ACM Conference Contributions

[SMC'21] *Multi-agent deep reinforcement learning using attentive graph neural architectures for real-time strategy games* (w/ W.J. Yun, S. Yi)

[DSN'21] *Spatio-temporal split learning* (w/ S. Park, S. Jung, S. Yoo), *Supplemental Volume*

[ITC-CSCC'21] *Noise rejection in mmWave radar images using deep learning image processing methods* (w/ H. Baek, Y.J. Ha, S. Jung)

[ITC-CSCC'21] *CNN-based hand gesture recognition using mmWave radar* (w/ M. Yoo, Y.J. Ha, S. Jung)

[ITC-CSCC'21] *Deep learning auction for truthful secure UAV networking* (w/ H. Lee, S. Jung)

[INFOCOM'21] *Visualization of deep reinforcement autonomous aerial mobility learning simulations* (w/ G. Lee, W.J. Yun, S. Jung, J.-H. Kim), *Demo*

[ICOIN'21] *Infrastructure-assisted cooperative multi-UAV deep reinforcement energy trading learning for big-data processing* (w/ S. Jung, W.J. Yun, J.-H. Kim), ***(Best Paper Award)***

[ICOIN'21] *Quantum convolutional neural network for resource-efficient image classification: A quantum random access memory (QRAM) approach* (w/ S. Oh, J. Choi, J.-K. Kim)

[ICOIN'21] *A tutorial on quantum graph recurrent neural network (QGRNN)* (w/ J. Choi, S. Oh)

[ICOIN'21] *Proper cost Hamiltonian design for combinatorial optimization problems: A Boolean function approach* (w/ J. Choi, S. Oh, S. Park, J.-K. Kim)

[ICOIN'21] *Non-local self-attention mechanism for real-time context embedding deep shadow removal network* (w/ D. Kim)

[ICOIN'21] *Performance comparison of SRCNN, VDSR, and SRDenseNet deep learning models in embedded autonomous driving platforms* (w/ M. Shin, D. Kim, S. Park, Y. Kang, J. Kim, H. Lee, W.J. Yun, J. Choi, S. Park, S. Oh, J. Yoo)

[ICOIN'21] *On the tradeoff between computation-time and learning-accuracy in GAN-based super-resolution deep learning* (w/ J.Y. Shim, J.-K. Kim)

[ICOIN'21] *Auction-based truthful distributed resource allocation for smart grid systems* (w/ H. Ahn, J. Kim)

[ICOIN'21] *Auction-based deep learning computation offloading for truthful edge computing: A Myerson auction approach* (w/ H. Lee, S. Park, J. Kim)

[ICOIN'21] *Access management using Vickrey-Clarke-Groves auction in terrestrial-drone networks* (w/ J. Kim)

[ICOIN'21] *Joint behavioral cloning and reinforcement learning method for Propofol and Remifentanil infusion in Anesthesia* (w/ M. Shin)

[ICOIN'21] *Performance evaluation of consensus protocols in blockchain-based audit systems* (w/ A. Ahmad, M. Saad, D. Nyang, D. Mohaisen)

[ICOIN'21] *Efficient data delivery in content-centric network with stronger privacy of publisher* (w/ T.-Y. You, S.C. Seo)

[ICOIN'21] *Bitcoin price forecasting via ensemble-based LSTM deep learning networks* (w/ M. Shin, D. Mohaisen)

[ICOIN'21] *Generative adversarial attacks on fingerprint recognition systems* (w/ H.W. Kwon, J. Nam, Y.K. Lee)

[ICPR'20] *S2I-Bird: Sound-to-image generation of bird species using generative adversarial networks* (w/ J.Y. Shim, J.-K. Kim)

[QTML'20] *A quantum approach to the minimum dominating set problem* (w/ J. Choi, S. Oh, S. Park), *Poster*

[ICTC'20] *On the performance of generative adversarial network (GAN) variants: A clinical data study* (w/ J. Yoo, J. Park, A. Wang, D. Mohaisen)

[ICTC'20] *3D modeling and WebVR implementation using Azure Kinect, Open3D, and Three.js* (w/ W.J. Yun)

[ICTC'20] *A tutorial on quantum convolutional neural networks (QCNN)* (w/ S. Oh, J. Choi)

[ICTC'20] *Video placements and dynamic streaming services in wireless caching networks* (w/ M. Choi)

[ICTC'20] *Economic theoretic LEO satellite coverage control: An auction-based framework* (w/ J. Kim, T.D. Ngo, P.S. Oh, S. Kwon, C. Han)

[ICTC'20] *Reinforced edge selection using deep learning for robust surveillance in unmanned aerial vehicles* (w/ S. Park, J. Park, D. Mohaisen)

[ICTC'20] *Kirchhoff's circuit law applications to graph simplification in search problems* (w/ J. Choi)

[ICML'20] *XOR Mixup: Privacy-preserving data augmentation for one-shot federated learning* (w/ M. Shin, C. Hwang, J. Park, M. Bennis, S.-L. Kim), *Workshop on Federated Learning for User Privacy and Data Confidentiality*

[ICC'20] *User scheduling and power allocation for content delivery in caching helper networks* (w/ M. Choi, A.F. Molisch)

[WCNC'20] *Cache allocations for consecutive requests of categorized contents: Service provider's perspective* (w/ M. Choi, *et. al.*)

[ICAIIC'20] *Power demand forecasting using long short-term memory neural network for smart grid* (w/ V.H. Nguyen, V. Bui, Y.M. Jang)

[ICAIIC'20] *RNN-based deep learning for one-hour ahead load forecasting* (w/ V. Bui, V.H. Nguyen, D. Kim, Y.M. Jang)

[ICOIN'20] *Learning-based dot-grid alignment for projection distortion correction* (w/ D. Kim, D. Kwon, S. Park)

[ICOIN'20] *The useful quantum computing techniques for artificial intelligence engineers* (w/ J. Choi, S. Oh)

[ICOIN'20] *Privacy-sensitive parallel split learning* (w/ J. Jeon)

[ICOIN'20] *Fast and reliable offloading via deep reinforcement learning for mobile edge video computing* (w/ S. Park, Y. Kang, Y. Tian)

[GLOBECOM'19] *Multi-agent deep reinforcement learning for cooperative connected vehicles* (w/ D. Kwon)

[ICCV'19] *Deep multi-modal unsupervised pen pressure stylization* (w/ D. Kim), *Demo*

[QTML'19] *A quantum approach to max-weight independent set problem* (w/ J. Choi), *Poster*

[ICTC'19] *A tutorial on quantum approximate optimization algorithm (QAOA): Fundamentals and applications* (w/ J. Choi)

[ICTC'19] *Overview of distributed federated learning: Research issues, challenges, and biomedical applications* (w/ J. Jeon, J. Huh, H. Kim, S. Cho)

[DSN'19] *Privacy-preserving deep learning computation for geo-distributed medical big-data platforms* (w/ J. Jeon, *et. al.*), *Supplemental Volume*

[MobiSys'19] *Demo: Light-weight programming language for blockchain* (w/ J. Kim), *Demo*

[MobiSys'19] *Poster: Multi-agent deep reinforcement learning for connected vehicles* (w/ D. Kwon, S. Park), *Poster*

[ICML'19] *Adversarial imitation learning via random search in lane change decision-making* (w/ M. Shin), *Workshop on Artificial Intelligence for Autonomous Driving (AIAD)*

[5GWF'19] *PriMO-5G: Making firefighting smarter with immersive videos through 5G* (w/ K.W. Sung, *et. al.*)

[APWCS'19] *Joint offloading and streaming in mobile edges: A deep reinforcement learning approach* (w/ S. Park, J. Kim, D. Kwon, M. Shin), ***(IEEE Vehicular Technology Society (VTS) Seoul Chapter Award)***

[IJCNN'19] *Depth-controllable very deep super-resolution network* (w/ D. Kim, J. Kwon, T.-H. Kim)

[IJCNN'19] *Adversarial imitation learning via random search* (w/ M. Shin)

[ICC'19] *Probabilistic caching policy for categorized contents and consecutive user demands* (w/ M. Choi, D. Kim, D.-J. Han, J. Moon)

[ICBC'19] *Mempool optimization for defending against DDoS attacks in PoW-based blockchain systems* (w/ M. Saad, *et. al.*), **(19.61% (30/153))**

[ICAIIC'19] *Cyclic parameter sharing for privacy-preserving distributed deep learning platforms* (w/ J. Jeon, D. Kim)

[ICAIIC'19] *Hardness on style transfer deep learning for Rococo painting masterpieces* (w/ K.S. Kim, D. Kim)

[ICOIN'19] *Optimal trajectory learning for UAV-BS video provisioning system: A deep reinforcement learning approach* (w/ D. Kwon)
[CCS'18] *Secure compute-VM: Secure big data processing with SGX and compute accelerators* (w/ S. Yoo, H. Kim), *Workshop on System Software for Trusted Execution (SysTEX)*
[SECON'18] *Recipient-oriented transaction for preventing double spending attacks in private blockchain* (w/ H. Lee, M. Shin, K.S. Kim, Y. Kang), *Poster*
[ICTC'18] *Opportunistic medium access for hyper-dense beamformed IEEE 802.11ax wireless networks* (w/ D. Kwon)
[ICTC'18] *Very short-term photovoltaic power generation forecasting with convolutional neural networks* (w/ D. Kim, S.-W. Hwang)
[SMC'18] *Low-complexity online model selection with Lyapunov control for reward maximization in stabilized real-time deep learning platforms* (w/ D. Kim, J. Kwon)
[ICUFN'18] *Detecting selfish backoff attack in IEEE 802.15.4 CSMA/CA using logistic classification* (w/ K.S. Kim)
[AsiaCCS'18] *POSTER: Mining with proof-of-probability in blockchain* (w/ S. Kim), *Poster*
[ICSE'18] *Poster: A novel shared memory framework for distributed deep learning in high-performance computing architecture* (w/ S. Ahn, S. Kang), *Companion Volume*
[MobiSys'18] *Neural network syntax analyzer for embedded standardized deep learning* (w/ M. Shin, A. Mohaisen, J. Park, K.H. Lee), *Workshop on Embedded and Mobile Deep Learning (EMDL)*
[ICASSP'18] *Self-adaptive machine learning operating systems for security applications* (w/ K.S. Kim, D. Kwon, Y. Kim, J. Kim)
[ICOIN'18] *Top-down parsing for neural network exchange format (NNEF) in TensorFlow-based deep learning computation* (w/ B. Seo, M. Shin, Y.J. Mo)
[ICOIN'18] *Distributed dynamic power-aware buffering for multi-Gbps video streaming in IEEE 802.11ad fast session transfer* (w/ D. Kwon)
[ICOIN'18] *Proactive detection of algorithmically generated malicious domains* (w/ J. Spaulding, J. Park, A. Mohaisen)
[ICOIN'18] *High-dimensional statistical supervised learning for extracting information in steganography* (w/ S. Hwang, *et. al.*)
[SOSP'17] *A reliable, self-adaptive face identification framework via Lyapunov optimization* (w/ D. Kim, J.Y. Bang), *Workshop on A.I. Systems (AISys)*
[PAC'17] *Dynamic security-level maximization for stabilized parallel deep learning architectures in surveillance applications* (w/ Y.J. Mo, W. Lee, D. Nyang), *Poster*
[ICISCT'17] *Hybrid authentication scheme in peer-aware communication* (w/ Y. Kim, S. Cho)
[ICUFN'17] *Performance of deep learning computation with TensorFlow software library in GPU-capable multi-core platforms* (w/ Y.J. Mo, *et. al.*)
[ICIC'17] *Queue-aware learning for scheduling in healthcare clouds* (w/ S. Cho)
[ICIC'17] *Dynamic decision-making for fine-grained energy-efficient control in millimeter-wave access platforms* (w/ B. Seo, Y. Lee, S. Cho)
[SIGCOMM'16] *A longitudinal analysis of .i2p leakage in the public DNS infrastructure* (w/ S.H. Jeong, A.R. Kang, H.K. Kim, A. Mohaisen), *Poster*
[INFOCOM'16] *Buffer-stable adaptive per-module power allocation for energy-efficient millimeter-wave modular antenna array (MAA) platforms*, *Poster*
[EuCAP'16] *Millimeter-wave outdoor access shadowing mitigation using beamforming arrays* (w/ R. Weiler, *et. al.*)
[GLOBECOM'15] *60 GHz frequency sharing study between fixed service systems and small-cell systems with modular antenna arrays* (w/ L. Xian, R. Arefi, A.S. Sadri), *Workshop on Millimeter-Wave Backhaul and Access: From Propagation to Prototyping*
[ICTC'15] *Feasibility study of stochastic streaming with 4K UHD video traces* (w/ E.-S. Ryu)
[ICTC'15] *Towards robust UHD video streaming systems using scalable high efficiency video coding* (w/ E.-S. Ryu, Y. Ryu, H.-J. Roh, B.-G. Lee)
[HotPower'15] *A case for bad big.LITTLE switching: How to scale power-performance in SI-HMP* (w/ S. Yoo, Y. Shim, S. Lee, S.-A. Lee)
[IMS'15] *Study of coexistence between 5G small-cell systems and systems of the fixed service at 39 GHz band* (w/ L. Xian, *et. al.*)
[GLOBECOM'14] *Required frequency rejection in 39GHz millimeter-wave small cell systems* (w/ L. Xian, A. Maltsev, R. Arefi, A.S. Sadri), *Industry Program*
[ICC'14] *Quality-aware millimeter-wave device-to-device multi-hop routing for 5G cellular networks* (w/ A.F. Molisch)
[ITA'14] *Joint scheduling and stochastic streaming for device-to-device video delivery* (w/ A. Turci, G. Caire, A.F. Molisch), *Graduation Day Talk*
[MobiCom'13] *Demo: Adaptive video streaming for device-to-device mobile platforms* (w/ F. Meng, P. Chen, H.E. Egilmez, D. Bethanabhotla, A.F. Molisch, M.J. Neely, G. Caire, A. Ortega), *Demo*
[ICC'13] *Quality-aware coding and relaying for 60 GHz real-time wireless video broadcasting* (w/ Y. Tian, S. Mangold, A.F. Molisch)
[RWS'13] *Enabling gigabit services for IEEE 802.11ad-capable high-speed train networks* (w/ A.F. Molisch)
[PIMRC'11] *Joint optimization of HD video coding rates and unicast flow control for IEEE 802.11ad relaying* (J. Kim, Y. Tian, A.F. Molisch, S. Mangold)
[CCNC'10] *mmWave SVD-based beamformed MIMO communication systems* (w/ S. Tiraspolsky, B. Jeon, A. Rubtsov, A. Flaksman, V. Ermolayev)
[CCNC'09] *Demonstration of display sharing over multi-Gbps wireless video and audio network* (w/ B. Jeon)
[CCNC'09] *Optimal beaconing for 60 GHz millimeter wave* (w/ B. Jeon)
[COMSWARE'08] *Cooperative relaying strategies for multi-hop wireless sensor networks* (w/ W. Lee)
[CIT'06] *A power balanced multipath routing protocol in wireless ad-hoc sensor networks* (w/ D. Kim, W. Lee, B.-N. Park, C. Shin, C. Shin)
[VTC'06-Spring] *Energy-aware distributed topology control for coverage-time optimization in clustering-based heterogeneous sensor networks* (w/ J. Choi, W. Lee)
[ICCCN'05] *Effect of localized optimal clustering for reader anti-collision in RFID networks* (w/ W. Lee, J. Yu, J. Myung, E. Kim, C. Lee)
[VTC'05-Spring] *Low-energy localized clustering: An adaptive cluster radius configuration scheme for topology control in wireless sensor networks* (w/ S. Kim, D. Kim, W. Lee, E. Kim)

Patents (Granted), *totally 55*

- **21 US Patents:** (US 10637154), (US 9973364), (US 9887755), (US 9786985), (US 9167562), (US 8842640), (US 8761063), (US 8738068), (US 8619741), (US 8605634), (US 8599731), (US 8565200), (US 8547889), (US 8503317), (US 8493949), (US 8493948), (US 8483171), (US 8422372), (US 8416782), (US 8411644), (US 8379612)
- **14 Korean Patents:** (KR 102244380), (KR 102240442), (KR 102240425), (KR 102234007), (KR 102178895), (KR 102167344), (KR 102052835), (KR 102015429), (KR 101663613), (KR 101619964), (KR 101606951), (KR 101567829), (KR 101558017), (KR 100779165)
- **5 European Patents:** (EP 2422578), (EP 2343836), (EP 2282601), (EP 2262342), (EP 2260669)
- **9 Chinese Patents:** (CN 107634349), (CN 102461318), (CN 102461050), (CN 102388658), (CN 102318430), (CN 102318425), (CN 102204115), (CN 102132602), (CN 102057739)
- **6 Japanese Patents:** (JP 5584209), (JP 5584205), (JP 5580308), (JP 5508403), (JP 5368573), (JP 5364785)

Teaching Experience and Research Supervision

Teaching Experience

Korea University – College of Engineering, *Faculty Member*

- **School of Electrical Engineering – Undergraduate Courses:** *Computer Language and Laboratory* (EGRN151 – Fall 2020 ***(Best Teaching Award)***, Fall 2019 ***(Granite Tower (Seok-Top) Best Teaching Award)***); *Digital System* (KECE207 – Spring 2020); *Probability and Random Process* (KECE209 – Spring 2021, Spring 2020); *Digital System Design and Laboratory* (KECE210 – Fall 2020); *Data Communications* (KECE316 – Fall 2020)
- **Department of Semiconductor Engineering – Undergraduate Courses:** *Introduction to Computers* (SEMI103 – Spring 2021)
- **Department of Electrical and Computer Engineering – Graduate Courses:** *Wireless and Mobile Networks* (ECE522 – Spring 2020); *Smart Mobile Platform* (ECE654 – Fall 2020, Fall 2019); *IT R&D Policies 1* (ECE723 – Fall 2020); *Design and Analysis of Wireless Communication Systems* (ECE721 – Spring 2021)
- **Department of Electrical and Computer Engineering, Graduate School of Engineering and Technology:** *Wireless Network 1* (ITH524 – Spring 2021)

Chung-Ang University – College of Computer Science and Software, *Faculty Member*

- **School of Computer Science and Engineering – Graduate Courses:** *Optimal Design Theory and Applications* (Spring 2019, Spring 2018, Spring 2017); *Topics in Computer Science and Engineering* (Fall 2018, Fall 2017, Fall 2016)
- **School of Computer Science and Engineering – Undergraduate Courses:** *Numerical Analysis* (Spring 2019); *Compiler Design* (Spring 2019, Spring 2018, Spring 2017); *Principles of Programming Languages* (Fall 2018, Fall 2017, Fall 2016); *Algorithm Analysis* (Fall 2016); *Operating Systems* (Spring 2017, Spring 2016); *Calculus* (Spring 2017, Spring 2016); *Mobile Application Development* (Fall 2018, Fall 2017)

University of Southern California – Viterbi School of Engineering, *Teaching Assistant*

- *Wireless and Mobile Networks Design and Lab* [EE579] (Spring 2013), Lectured by **Professor Murali Annavaram**
  Graduate Course dedicated to Android Mobile Platform Research and Programming
- *Programming Systems Design* [CSci455x] (Spring 2012, Fall 2012), Lectured by **Professor Claire Bono**
  Undergraduate Course dedicated to Object-Oriented Programming (Java and C++) and Advanced Data Structures

Research Collaboration and Supervision

Postdoctoral Scholars

- **Dr. Minseok Choi** (09/2018–02/2019), jointly with **University of Southern California** (co-advised by Prof. Andreas F. Molisch)
  Currently, *Assistant Professor* at **Jeju National University**, Jeju, Korea
- **Dr. Soyi Jung** (03/2021–), jointly with **University of California at Irvine** (co-advised by Prof. Marco Levorato)
  Currently, *Research Professor* at **Korea University**, Seoul, Korea

Ph.D. Course Students and Alumni

- **Soohyun Park** (03/2019–)
- **Haemin Lee** (09/2020–)
- **Won Joon Yun** (03/2021–)
- **Youn-Seok Kwak** (03/2021–)
- **Hankyul Baek** (03/2021–)
- **Hyunsoo Lee** (03/2021–)
- **Yoo Jeong (Anna) Ha** (03/2021–)
- **GuSang Lee** (03/2022–)

M.S. Course Students and Alumni

- **Kyeongseon Kim** (09/2017–08/2019), *Researcher* at **LG Electronics**, Seoul, Korea
- **Dohyun Kwon** (03/2018–02/2020), *Researcher* at **Hyundai-Autoever**, Seoul, Korea
- **Dohyun Kim** (03/2018–02/2020), *Researcher* at **Naver Corporation**, Seongnam, Korea
- **MyungJae Shin** (03/2018–02/2020), *Researcher* at **Seoul National University Hospital**, Seoul, Korea
- **Jaeho Choi** (03/2019–02/2021)
- **Seunghoon Park** (03/2020–02/2022)
- **Youngki Kim** (03/2021–02/2023, On-Leave from *KETI*), *Researcher* at **Korea Electronics Technology Institute**, Seongnam, Korea
- **Minjae Yoo** (03/2021–02/2023)

Intel Corporation (Santa Clara, California, USA), *Graduate Interns*

- **Minseok Choi**, Ph.D. in EE from KAIST (02/2016–07/2016), now with **Jeju National University**, Jeju, Korea
- **Hidekazu Shimodaira**, Ph.D. in EEE from Tokyo Institute of Technology (07/2015–12/2015), now with **NTT DOCOMO**, Tokyo, Japan

USC Viterbi School of Engineering (Los Angeles, California, USA), *Graduate Students*

- **Feiyu Meng**, M.S. in EE from USC (Summer 2013, Fall 2013), now with **Apple**, Silicon Valley, CA, USA
- **Vivek Sankaravadivel**, M.S. in EE from USC (Spring 2011, Fall 2011), now with **Uber**, Silicon Valley, CA, USA

Professional Activities

Academic Activities in IEEE

Editorial Boards

- **Associate Editor (2020–)**, *IEEE Transactions on Vehicular Technology*
- **Guest Editor**, *Elsevier ICT Express – Special Issue on Mobile and Edge Computing Systems* 06/2021
- **Guest Editor**, *MDPI Electronics – Special Issue on Energy-Aware and Efficient Computing and Communications* 05/2021
- **Guest Editor**, *MDPI Electronics – Special Issue on Special Issue on Millimeter Wave Technology in 5G* 01/2020

Talks and Presentations (Selected)

Tutorials and Special Session Talks in International Conferences

- *Multi-Agent Deep Reinforcement Learning for Connected and Autonomous Vehicles*
  IEEE International Conference on A.I. in Information and Communication (ICAIIC 2021) Tutorial (Online, 04/2021)

- *Trust Computing with Learning-based Auction for Distributed Systems*
  International Workshop on Smart Info-Media Systems in Asia (SISA 2020) Keynote Speech (Seoul, Korea, 12/2020)
- *Advanced Deep Learning Methods and Their Applications to Distributed and Network Platforms*
  IEEE International Conference on ICT Convergence (ICTC 2019) Special Session Talk (Jeju, Korea, 10/2019)
- *Distributed Platform Research for Emerging Deep Learning Applications*
  IEEE International Conference on Information Networking (ICOIN 2019) Tutorial (Kuala Lumpur, Malaysia, 01/2019)
- *Securing the Internet of Things: A Machine Learning Approach (Making Machine Learning Practical)*
  IEEE International Conference on Communications (ICC 2018) Tutorial (Kansas City, MO, USA, 05/2018)
  Joint Presentation wih Prof. Aziz Mohaisen (University of Central Florida, Orlando, FL, USA)

Invited Talks at World-Wide Universities and Research Institutes

- *XOR Mixup: Privacy-Preserving Data Augmentation for One-Shot Federated Learning*
  Huawei Research Center (Deep Learning/Machine Learning for Computer Vision) (Nizhny Novgorod, Russia, 09/2020)
- *Deep Reinforcement Learning Research and Its Applications to Networks*
  Huawei Research Center (Fundamental and Applied Problems of Machine Learning) (Nizhny Novgorod, Russia, 12/2019)
- *Enabling Delay-Sensitive Robust Distributed Blockchain Mining via Econometric Methods*
  City University of Hong Kong (Hong Kong, 11/2018), Hosted by Prof. Cong Wang
- *Frequency Sharing Study between 5G Micro-Cellular Systems and Fixed Service Systems in Millimeter-Wave Bands*
  Intel Communications and Devices Group (iCDG) [Cellular Modem TechTalk] (Santa Clara, CA, USA, 01/2016)
- *Status of Millimeter-Wave and Device-to-Device Research*
  Nokia Research Center at Berkeley (Berkeley, CA, USA, 08/2014)
- *Advanced Device-to-Device Video Streaming: Theory and Implementation*
  Qualcomm Research Center (San Diego, CA, USA, 02/2014)

Tutorials and Special Session Talks at Korean Research Societies

- *Multi-Agent Deep Reinforcement Learning for Autonomous Vehicles*; **2021 JCCI Mobile Machine Learning Special Session** (Online, 04/2021)
- *Trends in Multi-Agent Deep Reinforcement Learning for Distributed Computing*; **2020 KICS Fall Conference Tutorial** (Seoul, Korea, 11/2020)
- *Deep Learning Computation for Economic Theory and Its Applications*; **2020 KICS Summer Conference Tutorial** (Yong Pyong, Korea, 08/2020)
- *Deep Learning Applications to Computer Networking*; **2020 KICS Winter Conference Tutorial** (Yong Pyong, Korea, 02/2020)
- *Deep Neural Network Basics*; **2020 KICS Winter Conference Tutorial** (Yong Pyong, Korea, 02/2020)
- *Artificial Intelligence Methods for Networks*; **2019 KICS Fall Conference Special Session Talk** (Seoul, Korea, 11/2019)
- *Explainable AI (XAI) and Imitation Learning for Automotive Applications*; **2019 IEEK Hyundai Motors Special Session** (Jeju, Korea, 06/2019)
- *Deep Learning Basics and Representative Models*; **2019 KIPS Spring Conference Tutorial** (Seoul, Korea, 05/2019)
- *Deep Learning Methods for Advanced Network*; **2019 KICS Winter Conference Tutorial** (Yong Pyong, Korea, 01/2019)
- *GPU Computing Platforms and Software for Deep Learning*; **2017 KICS Summer Conference Tutorial** (Jeju, Korea, 06/2017)
- *Dynamic Control and Software for Next-Generation Distributed Platforms*; **2017 KCC Special Session on New Research** (Jeju, Korea, 06/2017)
- *Machine Learning Techniques for Mobile Computing*; **2017 KICS Winter Conference Tutorial** (Jungsun, Korea, 01/2017)

Invited Talks at Korean Research Institutes

- *Trends in AI R&D for Edge/Mobile Platforms*; **SK Hynix** (Icheon, Korea, 09/2020)
- *Lyapunov Optimization and AI Applications to Mobility Platforms*; **Naver Labs - Robotics Lab** (Pankyo, Korea, 06/2020)
- *Distributed AI: Trends and Issues*; **ETRI** (Daejeon, Korea, 05/2020)
- *Federated Learning and Imitation Learning*; **ETRI** (Kwangju, Korea, 02/2020)
- *Federated and Imitation Learning*; **KT AI Tech Center** (Seoul, Korea, 12/2019)
- *Adversarial Imitation Learning and Federated Learning*; **ETRI** (Daejeon, Korea, 12/2019)
- *Distributed Learning and Deep Reinforcement Learning*; **ETRI** (Daejeon, Korea, 12/2019)
- *mmWave Radar and Sensors: Theory and Applications*; **LG Electronics** (Seoul, Korea, 11/2019)
- *Advanced Topics in Machine/Deep Learning*; **Posco ICT** (Pankyo, Korea, 11/2019)
- *mmWave Communications and Radar: Theory and Applications*; **ETRI** (Daejeon, Korea, 11/2019)
- *Network Performance Enhancement via Deep Reinforcement Learning*; **LG U+** (Seoul, Korea, 10/2019)
- *AI Seminar: Foundations and Business Cases*; **SK Broadband** (Seoul, Korea, 10/2019)
- *Deep Learning Methods for Advanced Networks*; **Korea Electronics Technology Institute (KETI)** (Pankyo, Korea, 02/2019)
- *Making Deep Neural Network Practical in Resource Constrained Computing Systems*; **ETRI** (Daejeon, Korea, 02/2018)
- *Dynamic Optimization for Reliable and Robust Deep Learning Systems*; **ETRI** (Daejeon, Korea, 02/2018)
- *Adaptive Lyapunov Control for Stabilized Learning Platforms*; **ETRI** (Daejeon, Korea, 07/2017)
- *GPU Computing Platforms and Software for Deep Learning*; **ETRI** (Daejeon, Korea, 07/2017)
- *Trends in Energy IT in Big-Data Era*; **Korea Electric Power Corporation (KEPCO) Research Institute** (Daejeon, Korea, 05/2017)
- *Stochastic Control of 60 GHz Links for Distributed Virtual Reality Network Platforms*; **ETRI** (Daejeon, Korea, 11/2016)
- *5G Wireless Platforms: Standards and Hardware/Software Prototyping*; **ETRI** (Daejeon, Korea, 10/2016)
- *Millimeter-Wave Radio Propagation, Beam Management, Systems, and Embedded Prototyping*; **ETRI** (Daejeon, Korea, 08/2016)
- *Intel's 5G Research with Millimeter-Wave Modular Antenna Arrays*; **ETRI** (Daejeon, Korea, 10/2014)
- *Issues and Solutions for Millimeter-Wave Network Technologies*; **Samsung Electronics - Memory Business** (Hwasung, Korea, 01/2013)

Invited Talks at Korean Universities (Selected)

- *Deep Learning and Data Science*; **Sunchon Nat'l University** (Online, 04/2021)
- *Reinforcement Learning: Introduction, MDP, Policy Gradient, and MADRL*; **Chungbuk Nat'l University** (Cheongju, Korea, 03/2021)
- *Deep Learning and Data Science*; **Dongguk University** (Seoul, Korea, 02/2021)
- *Deep Learning Trends in Distributed Computing*; **University of Seoul** (Online, 01/2021)
- *Deep Learning Computation for Economic Theory and Its Applications*; **Kookmin University** (Online, 09/2020)
- *Realizing Super-Resolution Deep Learning in Mobile Platforms*; **POSTECH Wireless Summit** (Pohang, Korea, 07/2020)
- *Federated and Distributed Deep Learning*; **Seoul Nat'l University College of Medicine** (Seoul, Korea, 06/2020)
- *Federated Learning for Medical and Mobile Platforms*; **California State University Long Beach** (Long Beach, CA, USA, 01/2020)
- *Federated and Imitation Learning Research Status*; **KAIST** (Daejeon, Korea, 12/2019)

- *Imitation and Federated Learning*; **Seoul Nat'l University College of Medicine, ITRC/Medical Big Data Research Center (MBRC) Workshop** (Seoul, Korea, 11/2019)
- *Federated and Imitation Learning*; **Chung-Ang University** (Seoul, Korea, 11/2019)
- *Federated and Imitation Learning Theory and Its Applications*; **Korea Military Academy** (Seoul, Korea, 11/2019)
- *Deep Reinforcement Learning*; **Sunchon Nat'l University** (Sunchon, Korea, 11/2019)
- *Imitation Learning and Its Applications*; **Soongsil University** (Seoul, Korea, 10/2019)
- *Imitation Learning and Its Applications to Autonomous Driving*; **Hanyang University** (Seoul, Korea, 09/2019)
- *Imitation Learning and Its Applications to Autonomous Driving*; **Soongsil University** (Seoul, Korea, 08/2019)
- *Mobile Caching*; **Korea University** (Seoul, Korea, 07/2019)
- *Deep Learning Basics and Representative Models*; **Hallym University** (Chuncheon, Korea, 05/2019)
- *Research Trends in Distributed Bigdata Platforms*; **Seoul National University Hospital** (Seoul, Korea, 04/2019)
- *Deep Reinforcement Learning Methods for Vehicular Networks*; **UNIST** (UIsan, Korea, 03/2019)
- *Deep Reinforcement Learning: Algorithms and Applications*; **Korea University** (Seoul, Korea, 02/2019)
- *Deep Learning Programming with Keras*; **Chonbuk National University** (Jinju, Korea, 11/2018)
- *Deep Learning Programming with Keras*; **Inha University** (Incheon, Korea, 11/2018)
- *Distributed Deep Learning Platform for Medical Big-Data*, **Seoul National University Hospital** (Seoul, Korea, 10/2018)
- *Deep Learning Basics and TensorFlow Programming*; **Chung-Ang University Red Cross College of Nursing** (Seoul, Korea, 07/2018)
- *Wireless Video Streaming via Lyapunov Optimization*; **KAIST** (Daejeon, Korea, 05/2018)
- *Reinforcement Learning and Support Vector Machine*; **Chungnam National University** (Daejeon, Korea, 05/2018)
- *BlockChain Technologies and Applications*; **Korea University** (Seoul, Korea, 03/2018)
- *Reinforcement Learning Theory and Implementation*; **Korea University** (Seoul, Korea, 02/2018)
- *Deep Learning Theory and Implementation*; **Korea University** (Seoul, Korea, 02/2018)
- *Decision Theory and Markovian Algorithms*; **Soongsil University** (Seoul, Korea, 11/2017)
- *Foundations of Deep Learning*; **Soongsil University** (Seoul, Korea, 11/2017)
- *Systems Research for Data-Intensive Learning Computation*; **Korea University** (Seoul, Korea, 10/2017)
- *Research Status in 60 GHz Multi-Gbps Wireless Embedded Platforms*; **Soongsil University** (Seoul, Korea, 06/2017)
- *Lyapunov Control for Parallelized Learning Platforms*; **Dankook University** (Yongin, Korea, 06/2017)
- *Trends in 5G Millimeter-Wave Wireless Networking Research*; **POSTECH** (Pohang, Korea, 05/2017)
- *Current Status of 60 GHz Millimeter-Wave Modular Antenna Array Research*; **Hanyang University** (Seoul, Korea, 03/2017)
- *Markov Decision Process*; **Korea University** (Seoul, Korea, 01/2017)
- *Introduction to mmWave Access, Backhaul, and 5G Cellular Networks*; **Ajou University** (Suwon, Korea, 12/2016)
- *Stochastic Optimization for Distributed Queueing Systems*; **Konkuk University** (Seoul, Korea, 10/2016)
- *Queue-Aware Scheduling and Streaming for Device-to-Device Video Delivery*; **Hanbat National University** (Daejeon, Korea, 07/2016)
- *mmWave Frequency Sharing between 5G Cellular Systems and Fixed Service Systems*; **Andong National University** (Andong, Korea, 07/2016)
- *Frequency Sharing Study between 5G Small-Cell Systems and Fixed Service Systems in Millimeter-Wave Bands*; **DGIST** (Daegu, Korea, 07/2016)
- *Stochastic Scheduling and Streaming for Device-to-Device Video Delivery*; **Seoul National University** (Seoul, Korea, 06/2016)
- *5G Cellular and Advanced WiFi Platforms*; **Gachon University** (Seongnam, Korea, 11/2015)
- *Intel's 5G Research with Millimeter-Wave Modular Antenna Arrays*; **Korea University** (Seoul, Korea, 11/2014)
- *Elements of Next-Generation Wireless Video Systems: Millimeter-Wave and Device-to-Device Algorithms*; **Korea University** (Seoul, Korea, 10/2014)
- *Elements of Next-Generation Wireless Video Systems: Millimeter-Wave and D2D Algorithms*; **Korea University** (Seoul, Korea, 10/2014)
- *Issues and Solutions for Millimeter-Wave Network Technologies*; **Korea University** (Seoul, Korea, 01/2013)

Special Lectures (Full/Half Day Presentation) at Research Institutes and Societies

- *Deep Reinforcement Learning: Algorithms, Software, Applications, and Trends*, **OSIA** (Seoul, Korea, 11/2019)
- *Deep Reinforcement Learning*; **KICS Workshop** (Daejeon, Korea, 10/2019)
- *Deep Learning Theory and Software*; **Korea Institute for Robot Industry Advancement** (Daegu, Korea, 08/2019)
- *Deep Learning Basics and Software*; **KICS Workshop** (Seoul, Korea, 08/2019)
- *Deep Learning Theory and Software*; **IEIE Special Lecture Series** (Seoul, Korea, 08/2019)
- *Machine Learning (Advanced)*; **Korea Institute of Robot and Convergence** (Seoul, Korea, 07/2019)
- *Deep Reinforcement Learning: from Basics to Autonomous Driving Applications*; **KICS Workshop** (Seoul, Korea, 07/2019)
- *Deep Learning Programming with TensorFlow/Keras*; **Korea Institute for Robot Industry Advancement** (Daegu, Korea, 07/2019)
- *Deep Reinforcement Learning*; **KIISE Information Networking Society** (Seoul, Korea, 05/2019)
- *Machine Learning for Data Analytics*; **Intelligent Transport Society of Korea (ITS Korea)** (Anyang, Korea, 04/2019)
- *Deep Learning Programming with TensorFlow/Keras*; **Korea Institute for Robot Industry Advancement** (Daegu, Korea, 02/2019)
- *Deep Learning Programming with TensorFlow*; **Korea Institute for Robot Industry Advancement** (Gumi, Korea, 09/2018)
- *Deep Reinforcement Learning: Algorithms and Applications*, **OSIA** (Seoul, Korea, 02/2019)
- *Deep Learning Theory and TensorFlow Implementation*, **Korean Institute of Broadcast and Media Engineers** (Seoul, Korea, 02/2019)
- *Deep Learning Programming with TensorFlow*, **Korea Institute for Robot Industry Advancement** (Gumi, Korea, 09/2018)
- *The 1st KICS Lecture on TensorFlow-based Deep Learning Programming*, **KICS Workshop** (Seoul, Korea, 06/2018)
- *Machine Learning Basics*, **KIISE Database Society - Big Data Technology Winter School** (Seoul, Korea, 02/2018)

Special Lectures (Full/Half Day Presentation) at Industry

- *Artificial Intelligence (A.I.) Practice*, **KTDS** (2019)
- *Deep Learning Theory and Software*, **KT Education Center for Artificial Intelligence** (2017, 2018, 2019), **SK C&C** (2018, 2019), **PoscoICT** (2018), **BC Card** (2019)
- *Deep Learning and Natural Language Processing*, **PoscoICT** (2018), **LGCNS** (2018, 2019)
- *Natural Language Processing with Deep Learning Practice*, **LGCNS** (2018, 2019)
- *Natural Language Processing with Deep Learning Workshop*, **LGCNS** (2018, 2019)
- *Machine Learning Theory and Practice*, **PoscoICT** (2017), **KT Education Center for Artificial Intelligence** (2017, 2018), **LGCNS** (2018), **Shinhan Card** (2018), **SK C&C** (2019)
- *Learning Inference*, **KT Education Center for Artificial Intelligence** (2018)

- *Statistics and Statistical Inference for Big-Data Analytics*, **LGCNS** (2018)
- *Python Programming and TensorFlow*, **KTDS** (2017)

Exhibition/Demonstration at Conferences and Public R&D Events

- *Deep Multi-modal Unsupervised Pen Pressure Stylization*; **IEEE/CVF ICCV 2019** (Seoul, Korea, 11/2019)
- *Light-Weight Programming Language for Blockchain*; **ACM MobiSys 2019** (Seoul, Korea, 06/2019)
- *Mobile Edge mmWave Backhaul and Access*; **Mobile World Congress (MWC) 2016** (Barcelona, Spain, 02/2016)
- *mmWave MAA Client Access & Backhaul Platform*; **Intel 360 degree 2016** (Anaheim, CA, 02/2016)
- *mmWave MAA Client Access & Backhaul Platform*; **IEEE GLOBECOM 2015 (Industry Demonstration ID-14)** (San Diego, CA, 12/2015)
- *mmWave Modular Antenna Array Client Access & Backhaul Platform*; **Intel Asia Innovation Summit 2015** (Taipei, Taiwan, 10/2015)
- *Enabling 5G Densification*; **Intel Developer Forum (IDF) 2015** (San Francisco, CA, USA, 08/2015)
- *Enabling 5G Densification*; **Intel Design and Test Technology Conference (DTTC) 2015** (Portland, OR, USA, 08/2015)
- *Enabling 5G Densification*; **Mobile World Congress (MWC) 2015** (Barcelona, Spain, 03/2015)
- *mmWave Modular Antenna Array for Next-Generation Wireless Networks*; **IEEE GLOBECOM 2014 (Expo)** (Austin, TX, USA, 12/2014)
- *Adaptive Video Streaming for Device-to-Device Mobile Platforms*; **ACM MobiCom 2013** (Miami, FL, USA, 10/2013)

Conference Activities and Services

Conference Activities

- **OC Patronage Chair**, 2022 IEEE International Conference on Communications (ICC)
- **TPC Vice Co-Chair**, 2021 IEEE International Conference on Information Networking (ICOIN)
- **TPC**, 2021 IEEE International Conference on Communications (ICC), Wireless Communications Symposium
- **TPC**, 2021 IEEE Wireless Communications and Networking Conference (WCNC)
- **Workshop Organizing Chair**, 2021 IEEE ICOIN Workshop on Artificial Intelligence and Mobility (AIM)
- **OC Secretary**, 2020 IEEE International Conference on ICT Convergence (ICTC)
- **TPC**, 2020 IEEE International Conference on ICT Convergence (ICTC)
- **Special Session Organizing Chair**, 2020 IEEE ICTC Special Session on KU-AIER (Korea University, A.I. Engineering Research)
- **TPC**, 2020 IEEE Global Communications Conference (GLOBECOM), Ad-hoc and Sensor Networks Symposium
- **TPC**, 2020 IEEE Green Energy and Smart Systems Conference (IGESSC)
- **TPC**, 2020 IEEE Wireless Communications and Networking Conference (WCNC)
- **TPC**, 2020 IEEE WCNC Workshop on Aerial Communications in 5G and Beyond Networks (AERCOMM)
- **TPC Co-Chair**, 2020 IEEE International Conference on Artificial Intelligence in Information and Communication (ICAIIC)
- **TPC Vice Co-Chair**, 2020 IEEE International Conference on Information Networking (ICOIN)
- **Workshop Organizing Chair**, 2020 IEEE ICOIN Workshop on Artificial Intelligence and Mobility (AIM)
- **TPC**, 2020 IEEE International Conference on Ubiquitous and Future Networks (ICUFN)
- **OC Secretary**, 2019 IEEE International Conference on ICT Convergence (ICTC)
- **TPC**, 2019 IEEE International Conference on ICT Convergence (ICTC)
- **TPC**, 2019 ACM International Symposium on Mobile Ad-Hoc Networking and Computing (MobiHoc)
- **TPC**, 2019 IEEE International Conference on Distributed Computing Systems (ICDCS)
- **TPC**, 2019 IEEE Vehicular Technology Conference (VTC Spring)
- **TPC Co-Chair**, 2019 IEEE International Conference on Networking, Architecture, and Storage (NAS)
- **TPC**, 2019 IEEE International Conference on Blockchain (Blockchain)
- **TPC**, 2019 IEEE Green Energy and Smart Systems Conference (IGESSC)
- **TPC**, 2019 IEEE International Conference on Communications in China (ICCC), Wireless Networking Track
- **TPC Co-Chair**, 2019 IEEE International Conference on Artificial Intelligence in Information and Communication (ICAIIC)
- **OC Publication Chair**, 2019 IEEE International Conference on Artificial Intelligence in Information and Communication (ICAIIC)
- **TPC Vice Co-Chair**, 2019 IEEE International Conference on Information Networking (ICOIN)
- **TPC**, 2019 IEEE International Conference on Ubiquitous and Future Networks (ICUFN)
- **TPC**, 2019 European Conference on Antennas and Propagation (EuCAP)
- **OC Secretary**, 2018 IEEE International Conference on ICT Convergence (ICTC)
- **TPC**, 2018 IEEE International Conference on ICT Convergence (ICTC)
- **TPC**, 2018 IEEE Green Energy and Smart Systems Conference (IGESSC)
- **TPC**, 2018 IEEE International Conference on Wireless Communications and Signal Processing (WCSP)
- **TPC**, 2018 ACM AsiaCCS Workshop on Security in Cloud Computing (SCC)
- **Special Session Organizing Chair**, 2018 IEEE ICASSP Special Session on Cybersecurity and Privacy
- **TPC Vice Co-Chair**, 2018 IEEE International Conference on Information Networking (ICOIN)
- **TPC**, 2018 IEEE VTS Asia Pacific Wireless Communications Symposium (APWCS)
- **OC Publication Vice Chair**, 2017 IEEE VTS Asia Pacific Wireless Communications Symposium (APWCS)
- **TPC**, 2018 IEEE International Conference on Ubiquitous and Future Networks (ICUFN)
- **TPC**, 2017 IEEE International Conference on ICT Convergence (ICTC)
- **Organizer**, 2015 IEEE GLOBECOM Workshop on Millimeter-Wave Backhaul and Access (mmWave)
- **TPC**, 2016 IEEE Vehicular Technology Conference (VTC Spring), Recent Results Track
- **TPC**, 2016 IEEE International Conference on Ubiquitous and Future Networks (ICUFN)
- **TPC Chair**, 2015 IEEE GLOBECOM Workshop on Millimeter-Wave Backhaul and Access (mmWave)
- **TPC**, 2015 IEEE Vehicular Technology Conference (VTC Spring), Recent Results Track
- **TPC**, 2015 European Conference on Antennas and Propagation (EuCAP)
- **TPC**, 2014 IEEE Vehicular Technology Conference (VTC Fall), Recent Results Track
- **TPC**, 2012 IEEE MASS Workshop on Internet of Things Technology and Architectures (IoTech)

References

- **Prof. Andreas F. Molisch *(Fellow of the IEEE)***, *Ph.D. Research and Dissertation Advisor*
  – Solomon Golomb – Andrew and Erna Viterbi Chair at the University of Southern California (Los Angeles, California, USA)

– Professor of Electrical and Computer Engineering at the University of Southern California (Los Angeles, California, USA)
– URL: https://wides.usc.edu/founder.html

- **Prof. Wonjun Lee *(Fellow of the IEEE)***, *M.S. Research and Thesis Advisor*
  – Professor of Cybersecurity at Korea University (Seoul, Republic of Korea)
  – URL: http://netlab.korea.ac.kr/wlee/