Joongheon Kim

Last update on August 10, 2021

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Highlights

Research Milestones

- **4236+ Citations** in Google Scholar Profile (H-index: 28+, i10-index: 97+)
- **54 IEEE Journals**, including *7 Vehicular Technology Society (VTS)* and *25 Communications Society (ComSoc)* journals
- **5 Conference Papers in Top-Tier Venues** (among 120+ papers), i.e., *IEEE ICDCS (2020)*, *IJCAI (2019)*, *IEEE ICDCS (2018)*, *ACM Multimedia (2017)*, and *ACM MobiSys (2010)*
- **5 Awards from IEEE Journals, Conferences, and Contests**, i.e., *IEEE ICOIN Best Paper Award (2021)*, *IEEE Systems Journal Best Paper Award (2020)*, *IEEE Seoul Section Student Paper Contests (2020 and 2019)*, and *IEEE VTS Seoul Chapter Award (2019)*
- **6 Tutorials at IEEE Conferences**, i.e., *ICOIN (2022)*, *CCNC (2022)*, *ICUFN (2021)*, *ICAIIC (2021)*, *ICOIN (2019)*, and *ICC (2018)*
- **55+ Patents** are granted, and among them, **46 Granted Patents** are successfully adopted by 60 GHz Millimeter-Wave IEEE 802.11 Standards, i.e., IEEE 802.11ad and IEEE 802.11ay
- **11 Awards** from Local (Korean) Conferences and Contests

Research Supervision and Teaching

- **Supervised 2 Postdoctoral Scholars:** now, Professors at Jeju Nat'l Univ. (Korea) and Hallym Univ. (Korea)
- **2 Best Teaching Awards at Korea University:** 1 award is for top 5% and 1 award is for top 20%

Society Academic Activities

- **Senior Member of the IEEE** and IEEE Membership for 16+ years
- **Associate Editor**, *IEEE Transactions on Vehicular Technology*
- **Guest Editor (03/2022)**, *IEEE Communications Standards Magazine* – Special Issue on Recent and Future Evolution of Wi-Fi
- **10+ Organizing Committee (OC) Contributions** for IEEE Conferences
- **50+ Technical Program Committee (TPC) Contributions** for IEEE Conferences

Positions

Korea University

- ***Associate Professor – Faculty Member (09/2019–):* School of Electrical Engineering**
  – *Adjunct Professor (03/2021–):* Department of Semiconductor Engineering
  – *Adjunct Professor (09/2019–):* Department of Electrical and Computer Engineering (Graduate School)
  – *Assistant Professor (09/2019–02/2021):* School of Electrical Engineering
- *Dean (06/2021–):* Center for Teaching and Learning
- *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
- *Associate Editor (2020–)*, **IEEE Transactions on Vehicular Technology**
- *Life Member (2018–)*, **Korean Institute of Communications and Information Sciences (KICS)**

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*, Fellow of the IEEE)
  – 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
  – 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)

- **Haedong Paper Award – Encouragement Paper Award** – *2021 KICS Summer Conference* 06/2021
  "Neural Architectural Nonlinear Pre-Processing for mmWave Radar-based Human Gesture Perception in On-Driving Scenarios"
- **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 (Top 20%)** – *Korea University* (Computer Language and Laboratory, EGRN151) Fall 2020
- **Granite Tower (Seok-Tap) Best Teaching Award (Top 5%)** – *Korea University* (Computer Language and Laboratory, EGRN151) Fall 2019

R&D Positions

Full-Time Positions

- **Korea University – College of Engineering**, Seoul, Republic of Korea
  – *Associate Professor (03/2021–)* and *Assistant Professor (09/2019–02/2021)*, School of Electrical Engineering
  – *Adjunct Professor (03/2021–)*, Department of Semiconductor Engineering
  – *Vice Director (10/2020–)*, Artificial Intelligence Engineering Research Center
- **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

Advisory and Consulting Positions

- **Samsung Electronics (C-Lab), Seoul National University R&D Center**, Seoul, Republic of Korea
  – *Advisory Professor (02/2020–08/2020)*, Nonlinear Regression Deep Learning Algorithm Design and Implementation

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R&D Projects

University/Center-Level Projects

- **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)** [2021R1A4A1030775, Grant: $150,000; Co-PI]
- **Development of Integrated Development Framework that supports Automatic Neural Network Generation and Deployment optimized for Runtime Environment** 04/2021–12/2023
  Funded by *Institute for Information and Communications Technology Promotion (IITP)* [2018-0-00170, Grant: $300,000; 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 *M inistry 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 (A Development of Driving Decision Engine for Autonomous Driving using Driving Experience Information)** 04/2020–10/2020
  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 (Human-Agent Cooperation Algorithm Design in Multi-Agent Environment)** 04/2020–08/2020
  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 (A Development of Driving Decision Engine for Autonomous Driving using Driving Experience Information)** 05/2019–10/2019
  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: 4236+, H-Index: 28+, i10-Index: 97+; obtained from Google Scholar Profile (as of August 10, 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

- S. Park, D. Kim, and J. Kim, "Dynamic Decision-Making for Stabilized Deep Learning Software Platforms," *Advances and Applications in Deep Learning*, IntechOpen, September 2020., (Editor: M.A. Aceves-Fernandez)
- A.F. Molisch, M. Ji, J. Kim, D. Burghal, and A.S. Tehrani, "Device-to-Device Communications," *Towards 5G: Applications, Requirements and Candidate Technologies*, Wiley, January 2017., (Editors: R. Vannithamby, S. Talwar)
- J. Kim, "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)
- J. Kim, "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)
- J. Kim, E. Kim, W. Lee, D. Kim, J. Choi, J. Jung, and C.K. Shin, "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)
- J. Kim, W. Lee, E. Kim, and T.K. Shih, "Coverage-Time Optimized Dynamic Clustering for Two-Tiered WM2Nets," *Wireless Mesh Networking*, McGraw-Hill, August 2008., (Editor: G. Aggelou)

Magazines and Journals

■ **IEEE, *59 publications***

[TII.major] W.J. Yun, S. Park, J. Kim, M. Shin, S. Jung, D. Mohaisen, J.-H. Kim, "(Reliability and Security for Intelligent Wireless Sensing and Control Systems)," *IEEE Transactions on Industrial Informatics*, v(n):ppp–ppp, Month Year.

[TSC.major] S. Jung, M. Levorato, J.-H. Kim, and J. Kim, "Self-Adaptive Learning Task Outsourcing for Edge-Assisted Aerial Surveillance Services," *IEEE Transactions on Services Computing*, v(n):ppp–ppp, Month Year.

[Access.major] Y.J. Ha, M. Yoo, G. Lee, S. Jung, S.W. Choi, J. Kim, and S. Yoo, "Spatio-Temporal Split Learning for Privacy-Preserving Medical Platforms: Case Studies with COVID-19 CT, X-Ray, and Cholesterol Data," *IEEE Access*, v:pppppp–pppppp, Month Year.

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

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

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

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

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

[ISJ'21.09] S. Jung, J. Kim, and J.-H. Kim, "Intelligent Active Queue Management for Stabilized QoS Guarantees in 5G Mobile Networks," *IEEE Systems Journal*, 15(3):ppp–ppp, September 2021.

[TVT'21.08] S. Jung, J. Kim, M. Levorato, C. Cordeiro, and J.-H. Kim, "Infrastructure-Assisted On-Driving Experience Sharing for Millimeter-Wave Connected Vehicles," *IEEE Transactions on Vehicular Technology*, 70(8):ppp–ppp, August 2021.

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

[TVT'21.06] S. Jung, W.J. Yun, M. Shin, J. Kim, and J.-H. Kim, "Orchestrated Scheduling and Multi-Agent Deep Reinforcement Learning for Cloud-Assisted Multi-UAV Charging Systems," *IEEE Transactions on Vehicular Technology*, 70(6):5362–5377, June 2021.

[Access'21.06] S. Park, M. Choi, W.-Y. Shin, and J. Kim, "Joint Mobile Charging and Coverage-Time Extension for Unmanned Aerial Vehicles," *IEEE Access*, 9:94053-94063, June 2016.

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

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

[JCN'21.04] D. Kim, S. Park, J. Kim, J.y. Bang, and S. Jung, "Stabilized Adaptive Sampling Control for Reliable Real-Time Learning-based Surveillance Systems," *IEEE/KICS Journal of Communications and Networks*, 23(2):129–137, April 2021.

[JCN'21.04] M. Choi, M. Shin, and J. Kim, "Dynamic Video Delivery using Deep Reinforcement Learning for Device-to-Device Underlaid Cache-Enabled Internet-of-Vehicle Networks," *IEEE/KICS Journal of Communications and Networks*, 23(2):117–128, April 2021.

[ISJ'21.03] D. Kim, D. Kwon, L. Park, J. Kim, and S. Cho, "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.

[TWC'20.12] M. Choi, A.F. Molisch, and J. Kim, "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.

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

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

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

[TII'20.05] M. Shin, D.-H. Choi, and J. Kim, "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.

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

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

[TWC'19.12] M. Choi, A. No, M. Ji, and J. Kim, "Markov Decision Policies for Dynamic Video Delivery in Wireless Caching Networks," *IEEE Transactions on Wireless Communications*, 18(12):5705–5718, December 2019., ***(Reviewed by IEEE Communications Society MMTC Communications - Review, 11(3)5–6, June 2020 (Cache-Assisted Dynamic Video Delivery for Mobile Users, Edited by Cong Shen))***

[TWC'19.10] M. Choi, J. Kim, and J. Moon, "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.

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

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

[TCAD'19.09] W. Lee, T. Kang, J.-J. Lee, K. Han, J. Kim, and M. Pedram, "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.

[TMC'19.07] J. Koo, J. Yi, J. Kim, M.A. Hoque, and S. Choi, "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.

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

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

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

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

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

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

[Access'18.05] S. Ahn, J. Kim, E. Lim, and S. Kang, "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.

[TVT'18.04] M. Choi, J. Kim, and J. Moon, "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.

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

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

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

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

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

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

[VTM'17.03] S. Lee, S. Hyeon, J. Kim, H. Roh, and W. Lee, "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.

[TVT'16.12] J. Kim, S.-C. Kwon, and G. Choi, "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.

[Access'16.12] J. Kim, L. Xian, and A.S. Sadri, "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.

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

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

[TSMC'15.11] J. Kim and W. Lee, "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.

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

[CL'14.09] S.-N. Hong and J. Kim, "Joint Coding and Stochastic Data Transmission for Uplink Cloud Radio Access Networks," *IEEE Communications Letters*, 18(9):1619–1622, September 2014.

[CL'14.07] S.-N. Hong and J. Kim, "A Low-Complexity Algorithm for Neighbor Discovery in Wireless Networks," *IEEE Communications Letters*, 18(7):1119–1122, July 2014.

[CL'14.03] J. Kim, A. Mohaisen, and J.-K. Kim, "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.

[TBC'13.09] J. Kim, Y. Tian, S. Mangold, and A.F. Molisch, "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.

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

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

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

Conference and R&D Event Contributions (Selected)

■ Top-Tier Conferences

[ICDCS'20] Ü. Meteriz, N.F. Yildiran, J. Kim, and D. Mohaisen, "Understanding the Potential Risks of Sharing Elevation Information on Fitness Applications," *IEEE ICDCS'20*. **(17.98%)**

[IJCAI'19] M. Shin and J. Kim, "Randomized Adversarial Imitation Learning for Autonomous Driving," *IJCAI'19*. **(17.89%)**

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

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

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

■ Honored, Awarded, and Workshops in Top-Tier Conferences

[ICML'21] H. Baek, W.J. Yun, J. Park, S. Jung, J. Kim, M. Ji, and M. Bennis, "Communication and Energy Efficient Slimmable Federated Learning via Superposition Coding and Successive Decoding," *ICML'21 (Workshop on Federated Learning for User Privacy and Data Confidentiality)*.

[ICOIN'21] S. Jung, W.J. Yun, J. Kim, and J.-H. Kim, "Infrastructure-Assisted Cooperative Multi-UAV Deep Reinforcement Energy Trading Learning for Big-Data Processing," *IEEE ICOIN'21*. ***(Best Paper Award)***

[ICML'20] M. Shin, C. Hwang, J. Kim, J. Park, M. Bennis, and S.-L. Kim, "XOR Mixup: Privacy-Preserving Data Augmentation for One-Shot Federated Learning," *ICML'20 (Workshop on Federated Learning for User Privacy and Data Confidentiality)*.

[APWCS'19] S. Park, J. Kim, D. Kwon, M. Shin, and J. Kim, "Joint Offloading and Streaming in Mobile Edges: A Deep Reinforcement Learning Approach," *IEEE APWCS'19*. ***(IEEE Vehicular Technology Society (VTS) Seoul Chapter Award)***

[ICML'19] M. Shin and J. Kim, "Adversarial Imitation Learning via Random Search in Lane Change Decision-Making," *ICML'19 (Workshop on Artificial Intelligence for Autonomous Driving)*.

[CCS'18] S. Yoo, H. Kim, and J. Kim, "Secure Compute-VM: Secure Big Data Processing with SGX and Compute Accelerators," *ACM CCS'18 (Workshop on System Software for Trusted Execution)*.

[MobiSys'18] M. Shin, J. Kim, A. Mohaisen, J. Park, and K.H. Lee, "Neural Network Syntax Analyzer for Embedded Standardized Deep Learning," *ACM MobiSys'18 (Workshop on Embedded and Mobile Deep Learning)*.

[SOSP'17] D. Kim, J.Y. Bang, and J. Kim, "A Reliable, Self-Adaptive Face Identification Framework via Lyapunov Optimization," *ACM SOSP'17 (Workshop on A.I. Systems)*.

■ IEEE and ACM Conferences

[ICTC'21] J. Kim, "Millimeter-Wave Wireless Technologies for Autonomous Aerial Mobility," *IEEE ICTC'21*.

[ICTC'21] Y. Kim, W.J. Yun, and J. Kim, "Trends in Neural Architecture Search: Towards the Acceleration of Search," *IEEE ICTC'21*.

[SMC'21] W.J. Yun, S. Yi, and J. Kim, "Multi-Agent Deep Reinforcement Learning using Attentive Graph Neural Architectures for Real-Time Strategy Games," *IEEE SMC'21*.

[ISWCS'21] W.J. Yun, B. Lim, S. Jung, Y.-C. Ko, J. Park, J. Kim, and M. Bennis, "Attention-based Reinforcement Learning for Real-Time UAV Semantic Communication," *IEEE ISWCS'21*.

[APWCS'21] J. Kim, Y. Kwak, S. Jung, and J.-H. Kim, "Quantum Scheduling for Millimeter-Wave Observation Satellite Constellation," *IEEE APWCS'21*.

[APWCS'21] H. Lee, S. Jung, and J. Kim, "Distributed and Autonomous Aerial Data Collection in Smart City Surveillance Applications," *IEEE APWCS'21*.

[ICUFN'21] Y. Kwak, W.J. Yun, S. Jung, and J. Kim, "Quantum Neural Networks: Concepts, Applications, and Challenges," *IEEE ICUFN'21*.

[ICUFN'21] H. Lee and J. Kim, "Trends in Blockchain and Federated Learning for Data Sharing in Distributed Platforms," *IEEE ICUFN'21*.

[ICUFN'21] S. Park and J. Kim, "Trends in LEO Satellite Handover Algorithms," *IEEE ICUFN'21*.

[ICUFN'21] Y.J. Ha, M. Yoo, S. Park, S. Jung, and J. Kim, "Secure Aerial Surveillance using Split Learning," *IEEE ICUFN'21*.

[DSN'21] J. Kim, S. Park, S. Jung, and S. Yoo, "Spatio-Temporal Split Learning," *IEEE/IFIP DSN'21 (Supplemental Volume)*.

[ITC-CSCC'21] H. Baek, Y.J. Ha, S. Jung, and J. Kim, "Noise Rejection in mmWave Radar Images using Deep Learning Image Processing Methods," *IEEE ITC-CSCC'21*.

[ITC-CSCC'21] M. Yoo, Y.J. Ha, S. Jung, and J. Kim, "CNN-based Hand Gesture Recognition Using mmWave Radar," *IEEE ITC-CSCC'21*.

[ITC-CSCC'21] H. Lee, S. Jung, and J. Kim, "Deep Learning Auction for Truthful Secure UAV Networking," *IEEE ITC-CSCC'21*.

[INFOCOM'21] G. Lee, W.J. Yun, S. Jung, J. Kim, and J.-H. Kim, "Visualization of Deep Reinforcement Autonomous Aerial Mobility Learning Simulations," *IEEE INFOCOM'21 (Demo)*.

[ICOIN'21] S. Oh, J. Choi, J.-K. Kim, and J. Kim, "Quantum Convolutional Neural Network for Resource-Efficient Image Classification: A Quantum Random Access Memory (QRAM) Approach," *IEEE ICOIN'21*.

[ICOIN'21] J. Choi, S. Oh, and J. Kim, "A Tutorial on Quantum Graph Recurrent Neural Network (QGRNN)," *IEEE ICOIN'21*.

[ICOIN'21] J. Choi, S. Oh, S. Park, J.-K. Kim, and J. Kim, "Proper Cost Hamiltonian Design for Combinatorial Optimization Problems: A Boolean Function Approach," *IEEE ICOIN'21*.

[ICOIN'21] D. Kim and J. Kim, "Non-Local Self-Attention Mechanism for Real-Time Context Embedding Deep Shadow Removal Network," *IEEE ICOIN'21*.

[ICOIN'21] J. Kim, M. Shin, D. Kim, S. Park, Y. Kang, J. Kim, H. Lee, W.J. Yun, J. Choi, S. Park, S. Oh, and J. Yoo, "Performance Comparison of SRCNN, VDSR, and SRDenseNet Deep Learning Models in Embedded Autonomous Driving Platforms," *IEEE ICOIN'21*.

[ICOIN'21] J.Y. Shim, J. Kim, and J.-K. Kim, "On the Tradeoff Between Computation-Time and Learning-Accuracy in GAN-Based Super-Resolution Deep Learning," *IEEE ICOIN'21*.

[ICOIN'21] H. Ahn, J. Kim, and J. Kim, "Auction-based Truthful Distributed Resource Allocation for Smart Grid Systems," *IEEE ICOIN'21*.

[ICOIN'21] H. Lee, S. Park, J. Kim, and J. Kim, "Auction-Based Deep Learning Computation Offloading for Truthful Edge Computing: A Myerson Auction Approach," *IEEE ICOIN'21*.

[ICOIN'21] J. Kim and J. Kim, "Access Management using Vickrey-Clarke-Groves Auction in Terrestrial-Drone Networks," *IEEE ICOIN'21*.

[ICOIN'21] M. Shin and J. Kim, "Joint Behavioral Cloning and Reinforcement Learning Method for Propofol and Remifentanil Infusion in Anesthesia," *IEEE ICOIN'21*.

[ICOIN'21] A. Ahmad, M. Saad, J. Kim, D. Nyang, and D. Mohaisen, "Performance Evaluation of Consensus Protocols in Blockchain-based Audit Systems," *IEEE ICOIN'21*.

[ICOIN'21] T.-Y. Youn, J. Kim, and S.C. Seo, "Efficient Data Delivery in Content-Centric Network with Stronger Privacy of Publisher," *IEEE ICOIN'21*.

[ICOIN'21] M. Shin, D. Mohaisen, and J. Kim, "Bitcoin Price Forecasting via Ensemble-based LSTM Deep Learning Networks," *IEEE ICOIN'21*.

[ICOIN'21] H.W. Kwon, J. Nam, J. Kim, and Y.K. Lee, "Generative Adversarial Attacks on Fingerprint Recognition Systems," *IEEE ICOIN'21*.

[ICPR'20] J.Y. Shim, J. Kim, and J.-K. Kim, "S2I-Bird: Sound-to-Image Generation of Bird Species using Generative Adversarial Networks," *IEEE ICPR'20*.

[QTML'20] J. Choi, S. Oh, S. Park, and J. Kim, "A Quantum Approach to the Minimum Dominating Set Problem," *QTML'20*.

[ICTC'20] J. Yoo, J. Park, A. Wang, D. Mohaisen, and J. Kim, "On the Performance of Generative Adversarial Network (GAN) Variants: A Clinical Data Study," *IEEE ICTC'20*.

[ICTC'20] W.J. Yun and J. Kim, "3D Modeling and WebVR Implementation using Azure Kinect, Open3D, and Three.js," *IEEE ICTC'20*.

[ICTC'20] S. Oh, J. Choi, and J. Kim, "A Tutorial on Quantum Convolutional Neural Networks (QCNN)," *IEEE ICTC'20*.

[ICTC'20] M. Choi and J. Kim, "Video Placements and Dynamic Streaming Services in Wireless Caching Networks," *IEEE ICTC'20*.

[ICTC'20] J. Kim, T.D. Ngo, P.S. Oh, S.S.-C. Kwon, C. Han, and J. Kim, "Economic Theoretic LEO Satellite Coverage Control: An Auction-based Framework," *IEEE ICTC'20*.

[ICTC'20] S. Park, J. Park, D. Mohaisen, and J. Kim, "Reinforced Edge Selection using Deep Learning for Robust Surveillance in Unmanned

Aerial Vehicles," *IEEE ICTC'20*.

[ICTC'20] J. Choi and J. Kim, "Kirchhoff's Circuit Law Applications to Graph Simplification in Search Problems," *IEEE ICTC'20*.

[ICC'20] M. Choi, A.F. Molisch, and J. Kim, "User Scheduling and Power Allocation for Content Delivery in Caching Helper Networks," *IEEE ICC'20*.

[WCNC'20] M. Choi, A.F. Molisch, D.-J. Han, J. Kim, and J. Moon, "Cache Allocations for Consecutive Requests of Categorized Contents: Service Provider's Perspective," *IEEE WCNC'20*.

[ICAIIC'20] V.H. Nguyen, V. Bui, J. Kim, and Y.M. Jang, "Power Demand Forecasting Using Long Short-Term Memory Neural Network for Smart Grid," *IEEE ICAIIC'20*.

[ICAIIC'20] V. Bui, V.H. Nguyen, D. Kim, J. Kim, and Y.M. Jang, "RNN-based Deep Learning for One-Hour Ahead Load Forecasting," *IEEE ICAIIC'20*.

[ICOIN'20] J. Choi, S. Oh, and J. Kim, "The Useful Quantum Computing Techniques for Artificial Intelligence Engineers," *IEEE ICOIN'20*.

[ICOIN'20] D. Kim, D. Kwon, S. Park, and J. Kim, "Learning-Based Dot-Grid Alignment for Projection Distortion Correction," *IEEE ICOIN'20*.

[ICOIN'20] J. Jeon and J. Kim, "Privacy-Sensitive Parallel Split Learning," *IEEE ICOIN'20*.

[ICOIN'20] S. Park, Y. Kang, Y. Tian, and J. Kim, "Fast and Reliable Offloading via Deep Reinforcement Learning for Mobile Edge Video Computing," *IEEE ICOIN'20*.

[GLOBECOM'19] D. Kwon and J. Kim, "Multi-Agent Deep Reinforcement Learning for Cooperative Connected Vehicles," *IEEE GLOBECOM'19*.

[ICCV'19] D. Kim and J. Kim, "Deep Multi-modal Unsupervised Pen Pressure Stylization," *IEEE ICCV'19 (Demo)*.

[QTML'19] J. Choi and J. Kim, "A Quantum Approach to Max-Weight Independent Set Problem," *QTML'19*.

[ICTC'19] J. Choi and J. Kim, "A Tutorial on Quantum Approximate Optimization Algorithm (QAOA): Fundamentals and Applications," *IEEE ICTC'19*.

[ICTC'19] J. Jeon, J. Kim, J. Huh, H. Kim, and S. Cho, "Overview of Distributed Federated Learning: Research Issues, Challenges, and Biomedical Applications," *IEEE ICTC'19*.

[5GWF'19] K.W. Sung, E. Mutafungwa, R. Jantti, M. Choi, J. Jeon, D. Kim, J. Kim, J. Cost-Requena, A. Nordlow, S. Sharma, G. Destino, Y. Deng, T. Mahmoodi, M. Ullmann, A. Nahler, Y. Kyung, S. Kim, S. Seo, and S.-L. Kim, "PriMO-5G: Making Firefighting Smarter with Immersive Videos through 5G," *IEEE 5GWF'19*.

[IJCNN'19] D. Kim, J. Kim, J. Kwon, and T.-H. Kim, "Depth-Controllable Very Deep Super-Resolution Network," *IEEE IJCNN'19*.

[IJCNN'19] M. Shin and J. Kim, "Adversarial Imitation Learning via Random Search," *IEEE IJCNN'19*.

[DSN'19] J. Jeon, J. Kim, J. Kim, K. Kim, A. Mohaisen, and J.-K. Kim, "Privacy-Preserving Deep Learning Computation for Geo-Distributed Medical Big-Data Platforms," *IEEE/IFIP DSN'19 (Supplemental Volume)*.

[MobiSys'19] D. Kwon, S. Park, and J. Kim, "Poster: Multi-Agent Deep Reinforcement Learning for Connected Vehicles," *ACM MobiSys'19 (Poster)*.

[MobiSys'19] J. Kim and J. Kim, "Demo: Light-Weight Programming Language for Blockchain," *ACM MobiSys'19 (Demo)*.

[ICC'19] M. Choi. D. Kim, D.-J. Han, J. Kim, and J. Moon, "Probabilistic Caching Policy for Categorized Contents and Consecutive User Demands," *IEEE ICC'19*.

[ICBC'19] M. Saad, L. Njilla, C.A. Kamhoua, J. Kim, D. Nyang, and A. Mohaisen, "Mempool Optimization for Defending Against DDoS Attacks in PoW-based Blockchain Systems," *IEEE ICBC'19*. **(19.61%)**

[ICAIIC'19] J. Jeon, D. Kim, and J. Kim, "Cyclic Parameter Sharing for Privacy-Preserving Distributed Deep Learning Platforms," *IEEE ICAIIC'19*.

[ICAIIC'19] K.S. Kim, D. Kim, and J. Kim, "Hardness on Style Transfer Deep Learning for Rococo Painting Masterpieces," *IEEE ICAIIC'19*.

[ICOIN'19] D. Kwon and J. Kim, "Optimal Trajectory Learning for UAV-BS Video Provisioning System: A Deep Reinforcement Learning Approach," *IEEE ICOIN'19*.

[ICTC'18] D. Kwon and J. Kim, "Opportunistic Medium Access for Hyper-Dense Beamformed IEEE 802.11ax Wireless Networks," *IEEE ICTC'18*.

[ICTC'18] D. Kim, S.-W. Hwang, and J. Kim, "Very Short-Term Photovoltaic Power Generation Forecasting with Convolutional Neural Networks," *IEEE ICTC'18*.

[SMC'18] D. Kim, J. Kwon, and J. Kim, "Low-Complexity Online Model Selection with Lyapunov Control for Reward Maximization in Stabilized Real-Time Deep Learning Platforms," *IEEE SMC'18*.

[ICUFN'18] J. Kim and K.S. Kim, "Detecting Selfish Backoff Attack in IEEE 802.15.4 CSMA/CA using Logistic Classification," *IEEE ICUFN'18*.

[SECON'18] H. Lee, M. Shin, K.S. Kim, Y. Kang, and J. Kim, "Recipient-Oriented Transaction for Preventing Double Spending Attacks in Private Blockchain," *IEEE SECON'18 (Abstract)*.

[AsiaCCS'18] S. Kim and J. Kim, "POSTER: Mining with Proof-of-Probability in Blockchain," *ACM AsiaCCS'18 (Exteded Abstract)*.

[ICSE'18] S. Ahn, J. Kim, and S. Kang, "Poster: A Novel Shared Memory Framework for Distributed Deep Learning in High-Performance Computing Architecture," *IEEE ICSE'18 (Companion Volume)*.

[ICASSP'18] K.S. Kim, D. Kwon, Y. Kim, J. Kim, and J. Kim, "Self-Adaptive Machine Learning Operating Systems for Security Applications," *IEEE ICASSP'18*.

[ICOIN'18] J. Spaulding, J. Park, J. Kim, and A. Mohaisen, "Proactive Detection of Algorithmically Generated Malicious Domains," *IEEE ICOIN'18*.

[ICOIN'18] D. Kwon and J. Kim, "Distributed Dynamic Power-Aware Buffering for Multi-Gbps Video Streaming in IEEE 802.11ad Fast Session Transfer," *IEEE ICOIN'18*.

[ICOIN'18] S. Hwang, K.S. Kim, Y. Kim, J. Kim, M. Park, S. Park, and J. Kim, "High-Dimensional Statistical Supervised Learning for Extracting Information in Steganography," *IEEE ICOIN'18*.

[ICOIN'18] B. Seo, M. Shin, Y.J. Mo, and J. Kim, "Top-Down Parsing for Neural Network Exchange Format (NNEF) in TensorFlow-based Deep Learning Computation," *IEEE ICOIN'18*.

[ICISCT'17] Y. Kim, J. Kim, and S. Cho, " Hybrid Authentication Scheme in Peer-Aware Communication," *IEEE ICISCT'17*.

[PAC'17] J. Kim, Y.J. Mo, W. Lee, and D. Nyang, "Dynamic Security-Level Maximization for Stabilized Parallel Deep Learning Architectures in Surveillance Applications," *IEEE PAC'17*.

[ICUFN'17] Y.J. Mo, J. Kim, J.-K. Kim, A. Mohaisen, and W. Lee, "Performance of Deep Learning Computation with TensorFlow Software Library in GPU-Capable Multi-Core Computing Platforms," *IEEE ICUFN'17*.

[ICIC'17] J. Kim, B. Seo, Y. Lee, and S. Cho, "Dynamic Decision-Making for Fine-Grained Energy-Efficient Control in Millimeter-Wave Access Platforms," *IEEE ICIC'17 (Samsung LTE & 5G Special Workshop)*.

[ICIC'17] J. Kim and S. Cho, "Queue-Aware Learning for Scheduling in Healthcare Clouds," *IEEE ICIC'17 (Samsung LTE & 5G Special Workshop)*.

[SIGCOMM'16] S.H. Jeong, A.R. Kang, J. Kim, H.K. Kim, and A. Mohaisen, "A Longitudinal Analysis of .i2p Leakage in the Public DNS Infrastructure,"

ACM SIGCOMM'16 (Abstract).

[INFOCOM'16] J. Kim, "Buffer-Stable Adaptive Per-Module Power Allocation for Energy-Efficient Millimeter-Wave Modular Antenna Array (MAA) Platforms," *IEEE INFOCOM'16 (Abstract)*.

[EuCAP'16] R. Weiler, W. Keusgen, A. Maltsev, T. Kuhne, A. Pudeyev, L. Xian, J. Kim, and M. Peter, "Millimeter-Wave Outdoor Access Shadowing Mitigation using Beamforming Arrays," *IEEE EuCAP'16*.

[GLOBECOM'15] J. Kim, L. Xian, R. Arefi, and A.S. Sadri, "60 GHz Frequency Sharing Study between Fixed Service Systems and Small-Cell Systems with Modular Antenna Arrays," *IEEE GLOBECOM'15 (Workshop on Millimeter-Wave Backhaul and Access)*.

[ICTC'15] J. Kim and E.S. Ryu, "Feasibility Study of Stochastic Streaming with 4K UHD Video Traces," *IEEE ICTC'15*.

[ICTC'15] E.-S. Ryu, Y. Ryu, H.-J. Roh, J. Kim, and B.-G. Lee, "Towards Robust UHD Video Streaming Systems using Scalable High Efficiency Video Coding," *IEEE ICTC'15*.

[IMS'15] J. Kim, L. Xian, A. Maltsev, R. Arefi, and A.S. Sadri, "Study of Coexistence between 5G Small-Cell Systems and Systems of the Fixed Service at 39 GHz Band," *IEEE IMS'15*.

[GLOBECOM'14] J. Kim, L. Xian, A. Maltsev, R. Arefi, and A.S. Sadri, "Required Frequency Rejection in 39 GHz Millimeter-Wave Small Cell Systems," *IEEE GLOBECOM'14 (Industry Program)*.

[ICC'14] J. Kim and A.F. Molisch, "Quality-Aware Millimeter-Wave Device-to-Device Multi-Hop Routing for 5G Cellular Networks," *IEEE ICC'14*.

[ITA'14] J. Kim, A. Turci, G. Caire, and A.F. Molisch, "Joint Scheduling and Stochastic Streaming for Device-to-Device Video Delivery," *IEEE ITA'14 (Graduation Day Talk)*.

[MobiCom'13] J. Kim, F. Meng, P. Chen, H.E. Egilmez, D. Bethanabhotla, A.F. Molisch, M.J. Neely, G. Caire, and A. Ortega, "Demo: Adaptive Video Streaming for Device-to-Device Mobile Platforms," *ACM MobiCom'13 (Demo)*.

[ICC'13] J. Kim, Y. Tian, S. Mangold, and A.F. Molisch, "Quality-Aware Coding and Relaying for 60 GHz Real-Time Wireless Video Broadcasting," *IEEE ICC'13*.

[RWS'13] J. Kim and A.F. Molisch, "Enabling Gigabit Services for IEEE 802.11ad-Capable High-Speed Train Networks," *IEEE RWS'13*.

[PIMRC'11] J. Kim, Y. Tian, A.F. Molisch, and S. Mangold, "Joint Optimization of HD Video Coding Rates and Unicast Flow Control for IEEE 802.11ad Relaying," *IEEE PIMRC'11*.

[CCNC'10] S. Tiraspolsky, B. Jeon, J. Kim, A. Rubtsov, A. Flaksman, and V. Ermolayev, "mmWave SVD-based Beamformed MIMO Communication Systems," *IEEE CCNC'10*.

[CCNC'09] J. Kim and B. Jeon, "Optimal Beaconing for 60 GHz Millimeter Wave," *IEEE CCNC'09*.

[CCNC'09] J. Kim and B. Jeon, "Demonstration of Display Sharing over Multi-Gbps Wireless Video and Audio Network," *IEEE CCNC'09*.

[COMSWARE'08] J. Kim and W. Lee, "Cooperative Relaying Strategies for Multi-Hop Wireless Sensor Networks," *IEEE COMSWARE'08*.

[CIT'06] D. Shin, B.-N. Park, J. Kim, C. Shin, and C. Shin, "A Power Balanced Multipath Routing Protocol in Wireless Ad-Hoc Sensor Networks," *IEEE CIT'06*.

[VTC'06] J. Kim, J. Choi, and W. Lee, "Energy-Aware Distributed Topology Control for Coverage-Time Optimization in Clustering-Based Heterogeneous Sensor Networks," *IEEE VTC'06-Spring*.

[ICCCN'05] J. Kim, W. Lee, J. Yu, J. Myung, E. Kim, and C. Lee, "Effect of Localized Optimal Clustering for Reader Anti-Collision in RFID Networks: Fairness Aspect to the Readers," *IEEE ICCCN'05*.

[VTC'05] J. Kim, S. Kim, D. Kim, W. Lee, and E. Kim, "Low-Energy Localized Clustering: An Adaptive Cluster Radius Configuration Scheme for Topology Control in Wireless Sensor Networks," *IEEE VTC'05-Spring*.

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 – Graduate Courses (Department of Electrical and Computer Engineering), *Faculty Member*

- *Wireless and Mobile Networks (ECE522):* Spring 2020
- *Wireless Network 1 (ITH524), Graduate School of Engineering and Technology:* Spring 2021
- *Smart Mobile Platform (ECE654):* Fall 2021, Fall 2020, Fall 2019
- *Design and Analysis of Wireless Communication Systems (ECE721):* Spring 2021
- *IT R&D Policies 1 (ECE723):* Fall 2020

Korea University – Undergraduate Courses (School of Electrical Engineering), *Faculty Member*

- *Computer Language and Laboratory (EGRN151):* Fall 2021, Fall 2020 ***(Best Teaching Award)***, Fall 2019 ***(Granite Tower (Seok-Top) Best Teaching Award)***
- *Object-Oriented Programming (SEMI104), Department of Semiconductor Engineering:* Fall 2021
- *Introduction to Computers (SEMI103), Department of Semiconductor Engineering:* Spring 2021
- *Digital System (KECE207):* Spring 2020
- *Probability and Random Process (KECE209):* Spring 2022, Spring 2021, Spring 2020
- *Digital System Design and Laboratory (KECE210):* Fall 2020
- *Data Communications (KECE316):* Fall 2020

Chung-Ang University – Graduate Courses (College of Computer Science and Software), *Faculty Member*

- *Optimal Design Theory and Applications:* Spring 2019, Spring 2018, Spring 2017
- *Topics in Computer Science and Engineering:* Fall 2018, Fall 2017, Fall 2016

Chung-Ang University – Undergraduate Courses (College of Computer Science and Software), *Faculty Member*

- *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)
  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**, Korea
- **Dr. Soyi Jung** (03/2021–08/2021), jointly with **University of California at Irvine** (co-advised by Prof. Marco Levorato)
  Currently, *Assistant Professor* at **Hallym University**, Korea
- **Dr. Ju-Hyung Lee** (08/2021–, Primary Advisor: Prof. Young-Chai Ko), jointly with **University of Southern California** (co-advised by Prof. Andreas F. Molisch)

Ph.D. Course Students and Alumni

- **Soohyun Park** (03/2019–02/2023 (expected))
- **Haemin Lee** (09/2020–08/2023 (expected))
- **Hankyul Baek** (03/2021–)
- **Yoo Jeong (Anna) Ha** (03/2021–)
- **Yunseok Kwak** (03/2021–)
- **Hyunsoo Lee** (03/2021–)
- **Won Joon Yun** (03/2021–02/2024 (expected))
- **Joo Yong Shim** (11/2020–, Primary Advisor: Prof. Jong-Kook Kim)

M.S. Course Students and Alumni

- **Kyeongseon Kim** (09/2017–08/2019), *Researcher* at **LG Electronics**, Korea
- **Dohyun Kwon** (03/2018–02/2020), *Researcher* at **Hyundai-Autoever**, Korea
- **Dohyun Kim** (03/2018–02/2020), *Researcher* at **Naver Corporation**, Korea
- **MyungJae Shin** (03/2018–02/2020), *Engineer* at **mofl**, Korea
- **Jaeho Choi** (03/2019–02/2021), *Researcher (Military Service Exception)* at **Korea Meteorological Administration**, Korea
- **Youngkee Kim** (03/2021–02/2023), *Researcher* at **Korea Electronics Technology Institute**, Korea
- **Minjae Yoo** (03/2021–02/2023)
- **Gusang Lee** (03/2022–)

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

Editorial Boards

- **Associate Editor (2020–)**, *IEEE Transactions on Vehicular Technology*
- **Guest Editor (03/2022)**, *IEEE Communications Standards Magazine – Special Issue on Recent and Future Evolution of Wi-Fi*

Talks and Presentations (Selected)

Tutorials and Special Session Talks in International Conferences

- *Distributed and Split Deep Learning: Theory and Applications*
  IEEE International Conference on Ubiquitous Future Networks (ICUFN 2021) Tutorial (Jeju, Korea, 08/2021)
- *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)
- *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

- *AI/ML Technologies in Beyond 5G/6G*
  Ericsson-LG (R&D Hackathon / AI Learning Challenge – Keynote Speech) (Seoul, Korea, 05/2021)
- *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)
- *Federated Learning for Medical and Mobile Platforms*
  California State University Long Beach (Long Beach, CA, USA, 01/2020), Hosted by Prof. Sean Kwon and Prof. Henry Yeh
- *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)

Invited Talks at Korean Research Institutes

- *Deep Reinforcement Learning: Trends and Applications*; **SK Telecom (SKT)** (Seoul, Korea, 06/2021)
- *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)

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 Universities (Selected)

- *Reinforcement Learning*; **Sunchon Nat'l University** (Online, 05/2021)
- *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 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 D2D 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

- *Visualization of Deep Reinforcement Autonomous Aerial Mobility Learning Simulations*; **IEEE INFOCOM 2021** (Online, 05/2021)
- *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

- **TPC**, 2022 IEEE International Conference on Communications (ICC)
- **OC Patronage Chair**, 2022 IEEE International Conference on Communications (ICC)
- **TPC Track Chair**, 2022 IEEE Consumer Communications and Networking Conference (CCNC)
- **OC Secretary**, 2021 IEEE International Conference on ICT Convergence (ICTC)
- **OC Workshop Chair**, 2021 IEEE International Conference on Ubiquitous and Future Networks (ICUFN)
- **TPC**, 2021 IEEE Global Communications Conference (GLOBECOM)
- **TPC Vice Co-Chair**, 2021 IEEE International Conference on Information Networking (ICOIN)
- **TPC**, 2021 IEEE International Conference on Mobile Ad-Hoc and Smart Systems (MASS)
- **TPC**, 2021 IEEE Asia-Pacific Wireless Communication Systems (APWCS)
- **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)
- **TPC**, 2021 IEEE International Conference on Communications, Network, and Satellite (COMNETSAT)
- **TPC**, 2021 IEEE International Conference on Computer and Communications (ICCC)
- **TPC**, 2021 IEEE International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC)
- **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)
- **OC Poster Session Chair**, 2019 ACM International Conference on Emerging Networking Experiments and Technologies (CoNEXT)
- **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`