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**Founder and Director**, Korea University – Artificial Intelligence and Mobility (AIM) Laboratory, Seoul, Republic of Korea

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## Highlights

### Research Milestones

- **4236+ Citations** in Google Scholar Profile (H-index: 28+, i10-index: 97+)
- **54 IEEE Journals**, including 25 *Communications Society (ComSoc)*, 8 *Computer Society*, and 7 *Vehicular Technology Society* 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)*
- **5 Tutorials at IEEE Conferences**, i.e., *ICOIN (2022)*, *ICUFN (2021)*, *ICAHC (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
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## 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**
  - **Associate Editor (2020–), IEEE Transactions on Vehicular Technology**
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## 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
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## Awards and Honors

### Research and Academic Excellence (International)

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|---|---------|
| • <b>Best Paper Award</b> – 2021 <i>IEEE International Conference on Information Networking (ICOIN)</i><br>"Infrastructure-Assisted Cooperative Multi-UAV Deep Reinforcement Energy Trading Learning for Big-Data Processing" | 01/2021 |
| • <b>Bronze Paper Award</b> – 2020 <i>IEEE Seoul Section Student Paper Contest</i><br>"Reliable Offloading Target Selection using Deep Reinforcement Learning for Large Fire Accident"  | 12/2020 |
| • <b>IEEE Systems Journal Best Paper Award (Top 7 among 793 accepted papers in 2019: 0.88%)</b> – <i>IEEE Systems Council</i><br>"Towards Characterizing Blockchain-based Cryptocurrencies for Highly-Accurate Predictions"   | 03/2020 |

- **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

### R&D Projects

#### University/Center-Level Projects

- **Nano UAV Intelligence Systems Research Lab (NUI SRL)** 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 *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 Electronics – 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: 4236+, H-Index: 28+, i10-Index: 97+; obtained from Google Scholar Profile (as of August 12, 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: Lightning 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.
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## 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%**)
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- [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+*)

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- [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)*.
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- [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)*.
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#### ■ IEEE and ACM Conferences

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

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## 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)

#### 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 (ICAIIIC 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 with 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** (Ulsan, 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*; **KIIE 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*, **KIIE 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 (ICAIIIC)
- **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 (ICAIIIC)
- **OC Publication Chair**, 2019 IEEE International Conference on Artificial Intelligence in Information and Communication (ICAIIIC)
- **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>