

Associate Professor, Korea University – School of Electrical Engineering, Seoul, Republic of Korea

Distinguished Lecturer (2022–2023), IEEE Communications Society

Associate Editor (2020–), IEEE Transactions on Vehicular Technology

• Email: joongheon@korea.ac.kr • WWW: <https://joongheon.github.io>

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## Highlights

### Research Milestones

- **58 IEEE Journals**, including 25 *Communications Society (ComSoc)*, 8 *Computer Society*, and 9 *Vehicular Technology Society (VTS)* journals
- **6 Top-Tier Conference Papers**, i.e., IEEE INFOCOM (2022), IEEE ICDCS (2020), IJCAI (2019), IEEE ICDCS (2018), ACM Multimedia (2017), and ACM MobiSys (2010)
- **4288+ Citations** in Google Scholar Profile (H-index: 31+, i10-index 99+)
- **IEEE Systems Journal Best Paper Award (2020)**, Top 7 among 793 accepted papers in 2019 (0.88%)
- **6 Awards from IEEE Conferences and Contests**, i.e., IEEE ICOIN Best Paper Award (2021), IEEE Seoul Section Student Paper Contests (2020 and 2019), and IEEE VTS Seoul Chapter Awards (2 in 2021 and 1 in 2019)
- **5 Tutorials at IEEE Conferences**, i.e., *ICOIN (2022)*, *ICUFN (2021)*, *ICAIIC (2021)*, *ICOIN (2019)*, and *ICC (2018)*
- **60+ 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
- **15 Awards** from Local (Korean) Conferences and Contests
- **Research Funds (since March 2016)**: 3,557,670 USD  $\approx$  3,557,670,000 KRW (except University Internal Funds)

### Research Supervision and Teaching (As a faculty member since March 2016)

- **Supervised 3 Postdoctoral Scholars**, now, tenure-track professors at Kyung Hee University (Korea) and Hallym University (Korea); and a postdoctoral scholar at the University of Southern California (United States, jointly advised by Prof. Andreas F. Molisch)
- **Supervised 1 Ph.D. and 5 M.S. Students**, now, researchers at LG Electronics, Hyundai, Naver, government agency, and startup
- **4 Best Teaching Awards at Korea University**, 2 awards are for top 5% (*Granite Tower (Seok-Tap) Best Teaching Award*) and 2 awards are for top 20% (*Best Teaching Award*)

### IEEE Society Academic Activities

- **IEEE Communications Society (ComSoc) Distinguished Lecturer** (class of 2022–2023)
  - **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
  - **IEEE Vehicular Technology Society (VTS)**, Seoul Chapter Secretary for 3 years (2020–2022)
  - **18+ Organizing Committee (OC) Contributions** for IEEE Conferences
  - **56+ Technical Program Committee (TPC) Contributions** for IEEE Conferences
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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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## 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 (KU-AIER)
  - Dean (06/2021–05/2023), Center for Teaching and Learning (CTL)
- **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

#### Academia (Membership, Editorial Boards, and Services)

- **IEEE**
  - *Senior Member* (2018–), *Senior Member* (2006–2017)
  - *Distinguished Lecturer* (2022–2023), **IEEE Communications Society**
  - *Associate Editor* (2020–), **IEEE Transactions on Vehicular Technology** (Area: Vehicular Electronics and Systems)
  - *Guest Editor* (03/2022), **IEEE Communications Standards Magazine** (S.I. on Recent and Future Evolution of Wi-Fi)
- **Elsevier**
  - *Editor* (2021–), **ICT Express** (Area: AI for ICT Applications)
  - *Guest Editor* (10/2022), **Computer Networks** (S.I. on Machine Learning (ML) and Artificial Intelligence (AI) for the Internet of Things, 5G, and Beyond)
  - *Guest Editor* (03/2022), **ICT Express** (S.I. on Artificial Intelligence and Machine Learning Approaches to Communication)
  - *Guest Editor* (03/2021), **ICT Express** (S.I. on Mobile and Edge Computing Systems)
- **KICS (Korean Institute of Communications and Information Sciences)**
  - *Life Member* (2018–)
  - *Vice Executive Director* (2021, 2022), International Conference 1 Division (IEEE ICTC)
  - *Vice Executive Director* (2022), International Conference 3 Division (IEEE APCC)
  - *Vice Executive Director* (2021), Intelligence Technology 2 Division
  - *Director* (2020), Intelligence Technology 2 Division
  - *Director* (2018, 2019), Intelligence Technology Division
  - *Director* (2017), ICT Convergence Division
  - *Board Member* (01/2017–), KICS Technical Committee on Mobile Communications
  - *Board Member* (01/2017–), KICS Technical Committee on Communication Networking
  - *Board Member* (01/2019–), KICS Technical Committee on Coding and Information Theory
  - *Board Member* (01/2019–), KICS Technical Committee on Military Communication
  - *Board Member* (06/2018–), KICS Technical Committee on Spectrum Sharing
  - *Editor*, **The Journal of Korean Institute of Communications and Information Sciences**
  - *Guest Editor* (09/2019), **KICS Information and Communications Magazine** (S.I. on AI and Deep Learning)
- **IEIE (Institute of Electronics and Information Engineers)**
  - *Co-Director* (2021)
  - *Editor*, **Journal of the Institute of Electronics and Information Engineers** (Area: Telecommunication)
- **KIISE (Korean Institute of Information Scientists and Engineers)**
  - *Member*, Information Network Society
  - *Editor*, **Journal of KIISE** (Area: Information Network)
- **OSIA (Open Standards and ICT Association)**
  - *Vice President* (2021–), *General Affairs Director* (2020)

#### 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

### Awards and Honors

#### Research and Academic Excellence (International)

- **IEEE Communications Society (ComSoc) Distinguished Lecturer** (class of 2022–2023) 12/2021
- **IEEE Vehicular Technology Society (VTS) Seoul Chapter Award** (with Y. Kwak, S. Jung, J.-H. Kim) 08/2021  
"Quantum Scheduling for Millimeter-Wave Observation Satellite Constellation"
- **IEEE Vehicular Technology Society (VTS) Seoul Chapter Award** (with H. Lee, S. Jung) 08/2021  
"Distributed and Autonomous Aerial Data Collection in Smart City Surveillance Applications"
- **Best Paper Award** – 2021 *IEEE International Conference on Information Networking (ICOIN)* (with S. Jung, W.J. Yun, and J.-H. Kim) 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* (with S. Park) 12/2020  
"Reliable Offloading Target Selection using Deep Reinforcement Learning for Large Fire Accident"
- **IEEE Systems Journal Best Paper Award** – *IEEE Systems Council* (with M. Saad, J. Choi, D. Nyang, A. Mohaisen) 03/2020  
"Towards Characterizing Blockchain-based Cryptocurrencies for Highly-Accurate Predictions"
- **Gold Paper Award** – 2019 *IEEE Seoul Section Student Paper Contest* (with J. Yoo) 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** (with S. Park, D. Kwon, M. Shin) 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)

- **Outstanding Contribution Award – KICS** 12/2021
- **Excellence Paper Award – 2021 KICS Summer Conference** (with B. Lim, W.J. Yun, Y.-C. Ko) 06/2021  
"Deep Learning Based Non-Orthogonal Pilot Design for Massive MIMO"
- **Excellence Paper Award (Undergraduate) – 2021 KICS Summer Conference** (with G. Lee, W.J. Yun, S. Jung) 06/2021  
"Deep Reinforcement Learning Visualization and Simulations using Unity-RL in an Autonomous Driving Environment"
- **Haedong Paper Award – Encouragement Paper Award – 2021 KICS Summer Conference** (with H. Baek, Y.J. Ha, M. Yoo, S. Jung) 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** (with W.J. Yun) 11/2020  
"UAV Trajectory Optimization via Multi-Agent Deep Reinforcement Learning"
- **Encouragement Paper Award – 2020 KICS Summer Conference** (with W.J. Yun) 08/2020  
"3D Modeling and WebVR Implementation Using Azure Kinect, Open3D, and Three.js"
- **Encouragement Paper Award – 2020 KICS Winter Conference** (with S. Oh, J. Choi) 02/2020  
"Quantum Heuristic Solver using QAOA for the Maximum Independent Set Problem"
- **Encouragement Paper Award – 2020 KICS Winter Conference** (with J. Kim) 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

## Research and Academic Excellence for Students (while they are under Joongheon Kim's supervision)

- **2021 ICT Express Best Reviewer Award – ICT Express (Elsevier)** (Awarded to Soohyun Park) 12/2021

## Teaching and Supervision Excellence

- **Granite Tower (Seok-Tap) Best Teaching Award (Top 5%) – Korea University** (Introduction to Computers, SEMI103) Spring 2021
- **Best Teaching Award (Top 20%) – Korea University** (Probability and Random Process, KECE209) Spring 2021
- **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 Projects (Totally, 3,557,670 USD $\approx$ 3,557,670,000 KRW)

### University/Center-Level Projects

- **Intelligent 6G Wireless Access System Research Center** 04/2021–12/2025  
Funded by *Institute for ICT Promotion (IITP)* [2021-0-00467, Grant: \$70,000 (1 yr); Co-PI]
- **Nano UAV Intelligence Systems Research Lab (NUISRL) – ADD Military Special Research Center** 10/2020–12/2022  
Funded by *Agency for Defense Development (ADD)* [UD200027ED, Grant: \$130,000; Co-PI], PI: Kwangwoon University (Korea)
- **5G/Unmanned Vehicle Research Center (5G/UV-RC) – University ITRC Project** 06/2020–12/2022  
Funded by *Institute for ICT Promotion (IITP)* [2020-0-01637, Grant: \$15,995; Co-PI], PI: Hanyang University (Korea)
- **Human Resource Development for the Biomedical Unstructured Big Data Analysis – University ITRC Project** 08/2018–12/2021  
Funded by *Institute for ICT Promotion (IITP)* [2018-0-01833; Co-PI], PI: Seoul National University Hospital (Korea)
- **Intelligent Internet of Energy (IoE) Data Research Center – University ITRC Project** 02/2020–05/2020  
Funded by *Institute for ICT Promotion (IITP)* [2018-0-01396; Co-PI], 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: \$78,000 (1 yr); 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]
- **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)** 06/2018–06/2021  
Funded by *Institute for ICT Promotion (IITP)* [2018-0-00170, Grant: \$503,250; Co-PI]
- **Distributed Secure Platform for Scalable Clinical OMOP CDM Models** 04/2019–12/2020  
Funded by *Ministry of Health and Welfare* [HI19C0572, Grant: \$90,000; 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 ICT 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** 09/2020–09/2024  
Funded by *Samsung Electronics – Samsung Advanced Institute of Technology* [Grant: \$286,000; Primary-PI]
- **LTE/WiFi Vertical Handover Design and Implementation** 02/2022–09/2022  
Funded by *LG Electronics CTO Division – Smart Mobility Lab., Advanced R&BD Center* [Grant: \$xx,000; 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

- **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 ICT Promotion (IITP)* [2018-0-00170, Grant: \$100,000 (1 yr); Co-PI]
- **Autonomous Intelligent COA Search Methods for Cyber-Attacks** mm/2021–mm/2022  
Funded by *Agency for Defense Development (ADD)* [xxx, Grant: \$100,000; Primary-PI]
- **Research on Intelligent Agent-based CPS Security and Reliability** 05/2021–11/2021  
Funded by *Telecommunications Technology Association (TTA)* [Grant: \$48,000; 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: 4288+, H-Index: 31+, i10-Index: 99+; obtained from Google Scholar Profile (as of January 17, 2022)

## 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.

### ■ Books

- X. Lin, J. Zhang, Y. Liu, and J. Kim, *TBD*, Wiley (Working in Progress).

### ■ Book Translation (from English to Korean)

- J. Choi, J. Kim, J. No, C. Sohn, D. Ahn, H. Ahn, H. Lee, and H. Jung, *Programming in ANSI C*, Haksan Media, January 2021 (8th Edition, ISBN: 979-1185294315)., Originally written by E. Balagurusamy (Publisher: McGraw Hill, ISBN: 978-9351343202, January 2019)

## ■ 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, April 2016., (Editor: F. Hu)
- J. Kim, "Millimeter-Wave (mmWave) Radio Propagation Characteristics," *Opportunities in 5G Networks: A Research and Development Perspective*, CRC Press, 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, 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)

## Top-Tier Conferences and IEEE Journals/Magazines

### ■ Top-Tier Conference Proceedings

- [IJCAI'22] W.J. Yun, M. Shin, D. Mohaisen, S. Jung, J.-K. Kim, and J. Kim, "(Under Double Blind Review)," **International Joint Conference on Artificial Intelligence (IJCAI)**, Vienna, Austria, July 2022.
- [MMSys'22] M. Yoo, Y.J. Ha, H. Baek, S. Jung, A.F. Molisch, and J. Kim, "(Under Review)," **ACM Multimedia Systems Conference (MMSys)**, Athlone, Ireland, June 2022.
- [INFOCOM'22] H. Baek, W.J. Yun, Y. Kwak, S. Jung, M. Ji, M. Bennis, J. Park, and J. Kim, "Joint Superposition Coding and Training for Federated Learning over Multi-Width Neural Networks," **IEEE International Conference on Computer Communications (INFOCOM)**, Virtual, May 2022. (Acceptance Rate: 225/1129=19.93%)
- [ICDCS'20] Ü. Meteriz, N.F. Yildiran, J. Kim, and D. Mohaisen, "Understanding the Potential Risks of Sharing Elevation Information on Fitness Applications," **IEEE International Conference on Distributed Computing Systems (ICDCS)**, Virtual, November/December 2020. (Acceptance Rate: 105/584=17.98%)
- [IJCAI'19] M. Shin and J. Kim, "Randomized Adversarial Imitation Learning for Autonomous Driving," **International Joint Conference on Artificial Intelligence (IJCAI)**, Macau, China, August 2019. (Acceptance Rate: 850/4752=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 International Conference on Distributed Computing Systems (ICDCS)**, Vienna, Austria, July 2018. (Acceptance Rate: 78/378=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 International Conference on Multimedia (MM)**, Mountain View, CA, USA, October 2017. (Acceptance Rate: 189/684=27.63%)
- [MobiSys'10] J. Paek, J. Kim, and R. Govindan, "Energy-Efficient Rate-Adaptive GPS-based Positioning for Smartphones," **ACM International Conference on Mobile Systems, Applications, and Services (MobiSys)**, San Francisco, CA, USA, June 2010. (Acceptance Rate: 25/126=19.84%), (Citations: 607+)

### ■ IEEE Journals and Magazines, 62 publications

#### ◀ Revision ▶

- [TNNLS.major] W.J. Yun, M. Shin, D. Mohaisen, K. Lee, and J. Kim, "Hierarchical Deep Reinforcement Learning-based Propofol Infusion Assistant Framework in Anesthesia," *IEEE Transactions on Neural Networks and Learning Systems*, (Under Review after 1st Revision, 08-Dec-2021).
- [TMC.major] M. Choi, W.J. Yun, and J. Kim, "Delay-Sensitive and Power-Efficient Quality Control of Dynamic Video Streaming using Adaptive Super-Resolution," *IEEE Transactions on Mobile Computing*, (Under Review after 1st Revision, 22-Dec-2021).
- [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*, (Under 2nd Revision: Due on 31-Mar-2022).
- [CST.major] E. Au, L. Wilhelmsson, T. Baykas, and J. Kim, "Guest Editorial: Recent and Future Evolution of Wi-Fi," *IEEE Communications Standards Magazine*.

#### ◀ Accepted ▶

- [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.
- [TII.accept] W.J. Yun, S. Park, J. Kim, M. Shin, S. Jung, D. Mohaisen, and J.-H. Kim, "Cooperative Multi-Agent Deep Reinforcement Learning for Reliable Surveillance via Autonomous Multi-UAV Control," *IEEE Transactions on Industrial Informatics*, v(n):ppp-ppp, Month Year.
- [TVT.accept] 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.
- [TVT.accept] K. Kim, J.-H. Lee, S. Jung, J. Kim, and J.-H. Kim, "Stabilized Detection Accuracy Maximization using Adaptive SAR Image Processing in LEO Networks," *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.
- [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.



## ◀ 2021 ▶

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- [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. Tiraspolosky, 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*.
- [COMSWAR'08] J. Kim and W. Lee, "Cooperative Relaying Strategies for Multi-Hop Wireless Sensor Networks," *IEEE COMSWAR'08*.
- [CIT'06] D. Shin, W. Lee, 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*. (**32.17%**)

[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*.

#### ■ ICTC, ICOIN, ICUFN, ICAIIC Contributions

- [ICOIN'22] H. Lee, Y. Kim, H. Cho, S. Jung, and J. Kim, "The Credibility Cryptocurrency Valuation: Statistical Learning Analysis for Influencer Tweets," *IEEE ICOIN'22*.
- [ICOIN'22] H. Lee, H. Lee, S. Jung, and J. Kim, "Stable Marriage Matching for Traffic-Aware Space-Air-Ground Integrated Networks: A Gale-Shapley Algorithmic Approach," *IEEE ICOIN'22*.
- [ICTC'21] Y. Kwak, W.J. Yun, S. Jung, J.-K. Kim, and J. Kim, "Introduction to Quantum Reinforcement Learning: Theory and PennyLane-based Implementation," *IEEE ICTC'21*.
- [ICTC'21] W.J. Yun, Y.J. Ha, S. Jung, and J. Kim, "Autonomous Aerial Mobility Learning for Drone-Taxi Flight Control," *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*.
- [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*.
- [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**)
- [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 Remifentanyl 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*.
- [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*.
- [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*.
- [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*.
- [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 Net-

works," *IEEE ICTC'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*.
- [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*.
- [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*.
- [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*.

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## Patents (Granted), totally 60

- **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)
- **15 Korean Patents:** (KR 102293287), (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)
- **7 European Patents:** (EP 3255730), (EP 2441203), (EP 2422578), (EP 2343836), (EP 2282601), (EP 2262342), (EP 2260669)
- **11 Chinese Patents:** (CN 107634349), (CN 102461318), (CN 102461050), (CN 102388658), (CN 102349340), (CN 102342162), (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

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

#### Korea University – Undergraduate Courses (College of Engineering (EGRN), School of Electrical Engineering (KECE), and Department of Semiconductor Engineering (SEMI)), Faculty Member

- *Data Communications (KECE316):* Fall 2020
- *Digital System Design and Laboratory (KECE210):* Fall 2020
- *Probability and Random Process (KECE209):* Spring 2022, Spring 2021 (*Best Teaching Award, Top 20%*), Spring 2020
- *Digital System (KECE207):* Spring 2020
- *Computer Language and Laboratory (EGRN151):* Fall 2021, Fall 2020 (*Best Teaching Award, Top 20%*), Fall 2019 (*Granite Tower (Seok-Top) Best Teaching Award, Top 5%*)
- *Object-Oriented Programming (SEMI104):* Fall 2021
- *Introduction to Computers (SEMI103):* Spring 2021 (*Granite Tower (Seok-Top) Best Teaching Award, Top 5%*)

#### Korea University – General Education and International Winter Campus (IWC), Faculty Member

- *Future Mobility Technology (GEQR075):* Spring 2022
- *Introduction to Artificial Intelligence (IWC420):* Winter 2021 (12/2021–01/2022)

#### 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) (Ph.D. Advisor: Prof. Jaekyun Moon at Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea)  
Currently, *Assistant Professor* at **Kyung Hee University**, Korea
- **Dr. Soyi Jung** (03/2021–08/2021), jointly with **University of California at Irvine** (co-advised by Prof. Marco Levorato) (Ph.D. Advisor: Prof. Jae-Hyun Kim at Ajou University, Suwon, Korea)  
Currently, *Assistant Professor* at **Hallym University**, Korea
- **Dr. Ju-Hyung Lee** (08/2021–), jointly with **University of Southern California** (co-advised by Prof. Andreas F. Molisch) (Ph.D. Advisor: Prof. Young-Chai Ko at Korea University, Seoul, Korea)

### Ph.D. Course Students and Alumni

- **Soohyun Park** (03/2019–08/2023 (expected))
- **Haemin Lee** (09/2020–02/2024 (expected))
- **Won Joon Yun** (03/2021–08/2024 (expected))
- **Hankyul Baek** (03/2021–)
- **Yoo Jeong (Anna) Ha** (03/2021–)
- **Yunseok Kwak** (03/2021–)
- **Hyunsoo Lee** (03/2021–)

### 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 Motors Group**, Korea
- **Dohyun Kim** (03/2018–02/2020), *Researcher* at **Naver Corporation**, Korea
- **MyungJae Shin** (03/2018–02/2020), *Engineer* at **mofi**, 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)

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

- **Minseok Choi**, Ph.D. in EE from KAIST (02/2016–07/2016), now with **Kyung Hee University**, Suwon, 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

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## Professional Activities

### Talks and Presentations (Selected)

#### Tutorials and Special Session Talks in IEEE Conferences

- *Advanced Deep Learning Methods for Autonomous Mobility*  
**IEEE ICOIN 2022 Tutorial – IEEE Computer Society** (Online, 01/2022)
- *Distributed and Split Deep Learning: Theory and Applications*  
**IEEE ICUFN 2021 Tutorial – IEEE Communications Society** (Jeju, Korea, 08/2021)
- *Multi-Agent Deep Reinforcement Learning for Connected and Autonomous Vehicles*  
**IEEE ICAIIC 2021 Tutorial – IEEE Communications Society** (Online, 04/2021)
- *Advanced Deep Learning Methods and Their Applications to Distributed and Network Platforms*  
**IEEE ICTC 2019 Special Session Talk – IEEE Communications Society** (Jeju, Korea, 10/2019)
- *Distributed Platform Research for Emerging Deep Learning Applications*  
**IEEE ICOIN 2019 Tutorial – IEEE Computer Society** (Kuala Lumpur, Malaysia, 01/2019)
- *Securing the Internet of Things: A Machine Learning Approach (Making Machine Learning Practical)*  
**IEEE ICC 2018 Tutorial – IEEE Communications Society** (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)

## 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

### Organizing Committee (OC) Activities

- **IEEE GLOBECOM (IEEE Communications Society)**: 2015 (Organizer, *Workshop on Millimeter-Wave Backhaul and Access (mmWave)*)
- **IEEE ICC (IEEE Communications Society)**: 2022 (Patronage Chair)
- **IEEE ICTC (IEEE Communications Society)**: 2022 (Vice Chair for Administration, a.k.a., Secretary), 2021 (Workshop Organizer, *workshop on KU-AIER (Korea University, A.I. Engineering Research)*), 2021 (Secretary), 2020 (Secretary), 2020 (Special Session Organizing Chair, *Special Session on KU-AIER (Korea University, A.I. Engineering Research)*), 2019 (Secretary), 2018 (Secretary)
- **IEEE ICUFN (IEEE Communications Society)**: 2021 (Workshop Chair), 2021 (Workshop Organizing Chair, *Artificial Intelligence Emerging Applications (AIEA) Workshop*)
- **IEEE ICAIIC (IEEE Communications Society)**: 2019 (Publication Chair)
- **IEEE VTS APWCS (IEEE Vehicular Technology Society)**: 2021 (Finance Co-Chair), 2017 (Publication Vice Chair)
- **IEEE ICOIN (IEEE Computer Society)**: 2021 (Workshop Organizing Chair, *Workshop on Artificial Intelligence and Mobility (AIM)*), 2020 (Workshop Organizing Chair, *Workshop on Artificial Intelligence and Mobility (AIM)*)
- **IEEE ICASSP (IEEE Signal Processing Society)**: 2018 (Special Session Organizing Chair, *Special Session on Cybersecurity and Privacy*)
- **IEEE ICEIC**: 2021 (Local Arrangement Chair)
- **ACM CoNEXT**: 2019 (Poster Session Chair)

### Technical Program Committee (TPC) Activities

- **IEEE GLOBECOM (IEEE Communications Society)**: 2021, 2020, 2015 (Chair, *Workshop on Millimeter-Wave Backhaul and Access (mmWave)*)

- IEEE ICC (*IEEE Communications Society*): 2022, 2021
- IEEE CCNC (*IEEE Communications Society*): 2022 (Track Chair)
- IEEE ICTC (*IEEE Communications Society*): 2021, 2021 (*Workshop on Intelligent 6G Communication Systems*), 2020, 2019, 2018
- IEEE WCNC (*IEEE Communications Society*): 2022, 2021, 2020, 2020 (*Workshop on Aerial Communications in 5G and Beyond Networks (AERCOMM)*)
- IEEE COMNETSAT (*IEEE Communications Society*): 2021
- IEEE ICC (IEEE Communications Society): 2021, 2019
- IEEE IGESSC (*IEEE Communications Society*): 2021, 2020, 2019, 2018
- IEEE ICAIIC (*IEEE Communications Society*): 2022 (Co-Chair), 2021 (Co-Chair), 2020 (Co-Chair), 2019 (Co-Chair)
- IEEE ICUFN (*IEEE Communications Society*): 2022, 2021, 2020, 2019, 2018, 2016
- IEEE WCSP (*IEEE Communications Society*): 2018
- IEEE VTC (*IEEE Vehicular Technology Society*): 2019-Spring, 2016-Spring, 2015-Spring, 2014-Fall
- IEEE VTS APWCS (*IEEE Vehicular Technology Society*): 2018
- IEEE ICOIN (*IEEE Computer Society*): 2022, 2021 (Vice Co-Chair), 2020 (Vice Co-Chair), 2020 (*Workshop on Artificial Intelligence and Mobility (AIM)*), 2019 (Vice Co-Chair), 2018 (Vice Co-Chair)
- IEEE ICDCS (*IEEE Computer Society*): 2019
- IEEE MASS (*IEEE Computer Society*): 2021, 2012 (*Workshop on Internet of Things Technology and Architectures (IoTech)*)
- IEEE NAS (*IEEE Computer Society*): 2019 (Co-Chair)
- IEEE Blockchain (*IEEE Computer Society*): 2020, 2019
- ACM MobiHoc: 2019
- ACM AsiaCCS: 2018 (*Workshop on Security in Cloud Computing (SCC)*)
- IEEE ITC-CSCC: 2021
- EuCAP: 2021, 2019, 2015

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## 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>