

## Highlights

### Research Milestones

- **144 Journals** (among them, **103 IEEE Journals**), <https://sites.google.com/view/aimlab-kuee/publications/journals> – 113 Published / Accepted (among them, **74 IEEE**), **9** Under-Revision, and **22** Under-Review Journals
- **6526+ Citations** (H-index: 38+, i10-index 159+), obtained from Google Scholar Profile (as of July 16, 2023)
- **IEEE MMTC Best Journal Paper Award (2021)**, *IEEE Communications Society*
- **IEEE MMTC Outstanding Young Researcher Award (2020)**, *IEEE Communications Society*
- **IEEE Systems Journal Best Paper Award (2020)**, Top 7 among 793 accepted papers in 2019 (0.88%)
- **8 Awards from IEEE Conferences and Contests**, i.e., *IEEE ICTC Best Paper Award (2022)*, *IEEE ICOIN Best Paper Award (2021)*, *IEEE Seoul Section Student Paper Contest Awards (1 in 2020; 1 in 2019)*, and *IEEE VTS Seoul Chapter Awards (1 in 2022; 2 in 2021; 1 in 2019)*
- **6 Tutorials at IEEE Conferences**, i.e., *ICUFN (2022)*, *ICOIN (2022)*, *ICUFN (2021)*, *ICAHC (2021)*, *ICOIN (2019)*, and *ICC (2018)*
- **66+ 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
- **Research Funds (since March 2016)**: 6,639,884 USD  $\approx$  6,639,884,000 KRW (except University Internal Funds)

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

- **2 Tenure-Track Professors (formerly supervised by Prof. Joongheon Kim (Postdoctoral, Ph.D., M.S., Interns))**, i.e., Minseok Choi (*Kyung Hee University, Korea*), Soyi Jung (*Ajou University, Korea*)
- **8 Best Teaching Awards at Korea University**, i.e., 4 awards are for top 5% (*Granite Tower Best Teaching Award*) and 4 awards are for top 20% (*Best Teaching Award*)

### IEEE Society Academic Activities

- **Senior Member of the IEEE (2018–)** and IEEE Membership (2005–) for 18+ years
  - **Distinguished Lecturer, IEEE Communications Society (ComSoc)** (class of 2022–2023) IEEE ComSoc
  - **Distinguished Lecturer, IEEE Systems Council** (class of 2022–2024) IEEE Systems Council
  - **Editor (2022–)**, *IEEE Transactions on Machine Learning in Communications and Networking* IEEE ComSoc
  - **Associate Editor (2020–)**, *IEEE Transactions on Vehicular Technology* IEEE VTS
  - **Guest Editor (06/2022)**, *IEEE Communications Standards Magazine* (S.I. on Recent and Future Evolution of Wi-Fi) IEEE ComSoc
  - **IEEE Vehicular Technology Society (VTS)**, Seoul Chapter Treasurer for 3 years (2020–2023) IEEE VTS
  - **99+ Technical Program Committee (TPC) and 26+ Organizing Committee (OC) 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**, Seoul, Republic of Korea
  - Associate Professor (03/2021–Present), Assistant Professor (09/2019–02/2021), School of Electrical Engineering
  - Adjunct Professor (03/2023–Present), Department of Communications Engineering (with **Samsung Electronics**)
  - Adjunct Professor (03/2021–02/2026), Department of Semiconductor Engineering (with **SK Hynix**)
  - Adjunct Professor (11/2022–Present), Department of Future Science and Technology Business (Graduate School)
  - ADMINISTRATIVE POSITIONS
    - \* Dean (06/2021–05/2025), **Center for Teaching and Learning (CTL)**
    - \* Deputy Vice President (02/2022–), **Office of Academic Affairs**
- **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), CA, 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, CA, USA

- *Annenberg Graduate Fellow* (08/2009), Awarded with Ph.D. admission in Computer Science from USC (2009)
- *Ph.D. Research Assistant* (01/2011–08/2014), Communication Sciences Institute (Advised by Prof. Andreas F. Molisch)
- *Teaching Assistant* (01/2012–05/2013), Computer Science and Electrical Engineering Departments (CSCI455x and EE579)
- **InterDigital**, San Diego, CA, USA
  - *Intern* (05/2012–08/2012), Wireless Systems Evolution Department
  - *Subject Matter Expert in IEEE 802.11ad* (01/2012–02/2012), 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

### Industry, 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

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

- **IEEE**
  - *Senior Member* (2018–), *Member* (2006–2017)
  - *Distinguished Lecturer* (2022–2023), **IEEE Communications Society**
  - *Editor* (2022–), **IEEE Transactions on Machine Learning in Communications and Networking**
  - *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)
  - **IEEE Vehicular Technology Society (VTS) Seoul Chapter**
    - \* *Chapter Treasurer* (2022–Present), *Chapter Treasurer* (2020–2021)
    - \* **IEEE VTS APWCS Organizing Committee: Finance Chair** (2022), *Finance Co-Chair* (2021)
- **Elsevier**
  - *Editor* (2021–), **ICT Express** (Area: AI for ICT Applications)
  - *Guest Editor* (10/2022), **Computer Networks** (S.I. on ML and 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* (06/2021), **ICT Express** (S.I. on Mobile and Edge Computing Systems)

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## Awards and Honors

### Research and Academic Excellence (International)

- **Best Editor Award (2023)** – *ICT Express (Elsevier)* (07/2023)
- **Finalist (Top 25), AAAI Student Abstract and Poster Session – Oral Presentation Contest (2023)** (w/ H. Baek, W.J. Yun)  
*"FV-Train: Quantum Convolutional Neural Network Training with a Finite Number of Qubits by Extracting Diverse Features"*
- **IEEE ICTC Best Paper Award (2022)** – *IEEE Communications Society* (w/ J.-H. Lee, D.P. Selvam, A.F. Molisch)  
*"Reinforcement Learning Empowered Massive IoT Access in LEO-based Non-Terrestrial Networks"*
- **Best Special Issue Guest Editor Award (2022)** – *ICT Express (Elsevier)*, *S.I. on Mobile Edge Computing Systems* (06/2021)
- **Distinguished Lecturer (class of 2022–2024)** – *IEEE Systems Council*
- **Distinguished Lecturer (class of 2022–2023)** – *IEEE Communications Society*
- **IEEE VTS Seoul Chapter Award (2022)** – *IEEE Vehicular Technology Society* (w/ H. Lee, W.J. Yun, S. Jung, J.-H. Kim)  
*"DDPG-based Deep Reinforcement Learning for Loitering Munition Mobility Control: Algorithm Design and Visualization"*
- **Spotlight, Oral Presentation (2022)** – *ICML Workshop on Dynamic Neural Networks* (2022)  
*"Slimmable Quantum Federated Learning"*
- **IEEE MMTC Best Journal Paper Award (2021)** – *IEEE Communications Society* (w/ M. Choi, A.F. Molisch)  
 – 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.
- **IEEE VTS Seoul Chapter Award (2021)** – *IEEE Vehicular Technology Society* (w/ Y. Kwak, S. Jung, J.-H. Kim)  
*"Quantum Scheduling for Millimeter-Wave Observation Satellite Constellation"*
- **IEEE VTS Seoul Chapter Award (2021)** – *IEEE Vehicular Technology Society* (w/ H. Lee, S. Jung)  
*"Distributed and Autonomous Aerial Data Collection in Smart City Surveillance Applications"*
- **IEEE ICOIN Best Paper Award (2021)** – *IEEE Computer Society* (w/ S. Jung, W.J. Yun, J.-H. Kim)  
*"Infrastructure-Assisted Cooperative Multi-UAV Deep Reinforcement Energy Trading Learning for Big-Data Processing"*
- **IEEE MMTC Outstanding Young Researcher Award (2020)** – *IEEE Communications Society*
- **Bronze Paper Award (2020)** – *2020 IEEE Seoul Section Student Paper Contest* (w/ S. Park)  
*"Reliable Offloading Target Selection using Deep Reinforcement Learning for Large Fire Accident"*
- **IEEE Systems Journal Best Paper Award (2020)** – *IEEE Systems Council* (w/ M. Saad, J. Choi, D. Nyang, A. Mohaisen)  
*"Towards Characterizing Blockchain-based Cryptocurrencies for Highly-Accurate Predictions,"* 14(1):321-332, March 2020.
- **Gold Paper Award (2019)** – *2019 IEEE Seoul Section Student Paper Contest* (w/ J. Yoo)  
*"Stabilized Super-Resolution Deep Learning Adaptation for UAV-Assisted Mobile Edges: A Lyapunov Optimization Approach"*
- **IEEE VTS Seoul Chapter Award (2019)** – *IEEE Vehicular Technology Society* (w/ S. Park, D. Kwon, M. Shin)  
*"Joint Offloading and Streaming in Mobile Edges: A Deep Reinforcement Learning Approach"*

- **Next Generation and Standards (NGS) Division Recognition Award (Q1/2005)** – *Intel Corporation*  
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 (2009)** – *University of Southern California*  
Awarded with Ph.D. Admission in Computer Science, Viterbi School of Engineering

### Research and Academic Excellence (Korea Regional)

- **Haedong Paper Award (02/2023)** – KICS (w/ W.J. Yun, J.P. Kim, S. Jung, J. Park)  
"Dynamic quantum federated learning framework at satellites and ground stations using slimmable quantum neural networks"
- **Excellence Paper Award (02/2023)** – 2023 KICS Winter Conference (w/ G.S. Kim, H. Lee, S. Jung, J.-H. Kim)
- **Insung Research Grant Award (01/2023)** – *Korea University*  
For recognizing Korea University professors in research excellence during the first 3 years at Korea University (Top 5%)
- **Excellence Paper Award (02/2022)** – 2022 Summer Workshop on Computer Communications (SWCC) (w/ H. Lee, S. Jung)
- **Excellence Paper Award (02/2022)** – 2022 KICS Winter Conference (w/ Y. Kim, Y.K. Lee, S. Jung)
- **Haedong Young Scholar Award (2018)** – KICS and Haedong Foundation  
For recognizing a researcher under the age of 40 who has made outstanding contributions to communication sciences R&D
- **Haedong Paper Award (06/2021)** – KICS (w/ H. Baek, Y.J. Ha, M. Yoo, S. Jung)  
"Neural architectural nonlinear pre-processing for mmWave radar-based human gesture perception in on-driving scenarios"
- **Excellence Paper Award (06/2021)** – 2021 KICS Summer Conference (w/ B. Lim, W.J. Yun, Y.-C. Ko)
- **Excellence Paper Award (Undergraduate) (06/2021)** – 2021 KICS Summer Conference (w/ G. Lee, W.J. Yun, S. Jung)
- **Encouragement Paper Award (11/2020)** – 2020 KICS Fall Conference (w/ W.J. Yun)
- **Encouragement Paper Award (06/2020)** – 2020 KICS Summer Conference (w/ W.J. Yun)
- **Encouragement Paper Award (02/2020)** – 2020 KICS Winter Conference (w/ S. Oh, J. Choi)
- **Encouragement Paper Award (02/2020)** – 2020 KICS Winter Conference (w/ J. Kim)
- **Outstanding Paper Award (2008)** – LG Electronics CTO Office, Multimedia Research Laboratory  
– W. Lee, E. Kim, J. Kim, I. Lee, and C. Lee, "Movement-Aware Vertical Handoff of WLAN and Mobile WiMAX for Seamless Ubiquitous Access," *IEEE Transactions on Consumer Electronics*, 53(4):1268-1275, November 2007.
- **RFID Expert Group President Award (2007)** – *The 3rd RFID/USN Research Paper Contest*
- **ETRI President Award (2006)** – *The 2nd RFID/USN Research Paper Contest*
- **Korea Association of RFID/USN (KARUS) President Award (2005)** – *The 1st RFID/USN Research Paper Contest*
- **Scholarships for Academic Excellence (Fall 1999, Fall 2000)** – *Korea University. Department of Computer Science and Engineering*

### Research and Academic Excellence of the Students under Joongheon Kim's Supervision

- **Best Presentation Awards (12/2022)** – A3 Foresight Program 2022 Workshop, Tokyo, Japan (AI-Based Future IoT Technologies and Services) (two awards for Soohyun Park and Chanyoung Park)
- **ICT Express Best Reviewer Award (2021)** – *ICT Express (Elsevier)* (for Soohyun Park)
- **Best Presentation Award (02/2021)** – A3 Foresight Program 2021 Workshop, Online (AI-Based Future IoT Technologies and Services) (for Hankyul Baek)

### Teaching and Supervision Excellence

- **Granite Tower Best Teaching Award (Top 5%)** – *Korea University* (Future Mobility Technology, GEQR075) Spring 2022
- **Best Teaching Award (Top 20%)** – *Korea University* (Probability and Random Process, KECE209) Spring 2022
- **Granite Tower Best Teaching Award (Top 5%)** – *Korea University* (Computer Language and Lab, EGRN151) Fall 2021
- **Best Teaching Award (Top 20%)** – *Korea University* (Object Oriented Programming, SEMI104) Fall 2021
- **Granite Tower 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 Lab, EGRN151) Fall 2020
- **Granite Tower Best Teaching Award (Top 5%)** – *Korea University* (Computer Language and Lab, EGRN151) Fall 2019

### Academic and University Services

- **Outstanding Contribution Award** – *KIISE Information Network Society* 02/2023
- **2022 Best Chapter Award, IEEE Vehicular Technology Society Chapter (12/2022)** – *IEEE Seoul Section*  
Awarded as a Treasure with Seung-Hoon Hwang, Byeonghyo Shim, Oh-Soon Shin, Junsu Kim
- **Outstanding Contribution Award (02/2022)** – *KIISE Information Network Society*
- **Outstanding Contribution Award (12/2021)** – *Open Standards and ICT Association (OSIA)*
- **Outstanding Contribution Award (11/2021)** – *KICS*
- **Appreciation Recognition (10/2021)** – *Daegu Gyeongbuk Institute of Science and Technology (DGIST)*
- **Outstanding Contribution Award (11/2019)** – *KICS*
- **Fellow Employee Recognition [#3081146] (12/2014)** – *Intel Corporation*
- **Certificate of Appreciation (09/2010)** – *Department of Computer Science, University of Southern California*

### Business Administration

- **The 5th Hyundai/Kia Motors Marketing Forum (02/2004)**, 2nd Prize Winner (Sales Promotion)



## Highly-Cited Publications (IEEE Magazines/Journals and Top Conferences)

- **Highly-Cited (70+ citations) Publications** (as of July 16, 2023)
  - (MobiSys'10) [633+] *Energy-Efficient Rate-Adaptive GPS-based Positioning for Smartphones*
  - (TON'16) [173+] *Quality-Aware Streaming and Scheduling for Device-to-Device Video Delivery*
  - (PIEEE'21) [142+] *Communication-Efficient and Distributed Learning over Wireless Networks: Principles and Applications*
  - (ISJ'20) [136+] *Towards Characterizing Blockchain-based Cryptocurrencies for Highly-Accurate Predictions, (Best Paper Award)*
  - (TII'20) [121+] *Cooperative Management for PV/ESS-Enabled Electric Vehicle Charging Stations*
  - (TVT'19) [119+] *Auction-based Charging Scheduling with Deep Learning Framework for Multi-Drone Networks*
  - (TII'17) [116+] *Residential Demand Response for Renewable Energy Resources in Smart Grid Systems*
  - (TCE'07) [113+] *Movement-Aware Vertical Handoff of WLAN and Mobile WiMAX for Seamless Ubiquitous Access*
  - (JCN'14) [109+] *Fast Millimeter-Wave Beam Training with Receive Beamforming*
  - (IOTJ'18) [096+] *Energy-Efficient Mobile Charging for Wireless Power Transfer in Internet of Things Networks*
  - (IOTJ'20) [081+] *Multiagent DDPG-Based Deep Learning for Smart Ocean Federated Learning IoT Networks*
  - (JSAC'18) [071+] *Wireless Video Caching and Dynamic Streaming under Differentiated Quality Requirements*

## **R&D Projects (Totally, 6,639,884 USD ≈ 6,639,884,000 KRW)**

### Industry-Funded Projects

- **Advancement Technology Development for Torpedo Deception Strategies in Submarines** 11/2022–11/2026  
Funded by *LIG Nex1* [Grant: \$700,000; Primary-PI]
- **Advancement Technology Development for Submarine Target Identification and Engagement Support Intelligence** 11/2022–11/2026  
Funded by *LIG Nex1* [Grant: \$300,000; Primary-PI]
- **Mapping between Real World and Virtual Reality (VR) for End-Edged Cloud Real-Time VR Servers** 09/2020–09/2024  
Funded by *Samsung Advanced Institute of Technology* [Grant: \$286,000; Primary-PI]
- **Quantum Machine Learning-based Objection Detection for Point Cloud and its Acceleration** 12/2022–11/2023  
Funded by *Hyundai Motors Group* [Grant: \$110,000; Primary-PI]
- **Routing Algorithms for LEO Satellite Networks** 12/2022–08/2023  
Funded by *Solvit System* [Grant: \$27,500; Primary-PI]
- **Optimal Positioning Algorithms for Wide-Area Relaying Networks** 12/2022–08/2023  
Funded by *Solvit System* [Grant: \$22,000; Primary-PI]
- **Distributed Learning Algorithms to Build AI Models with Multi-Center Clinical Data** 11/2022–02/2023  
Funded by *Cipherome* [Grant: \$12,000; Primary-PI]
- **Cellular/Wi-Fi Handover Technology Development** 02/2022–12/2022  
Funded by *LG Electronics CTO Division – Smart Mobility Lab., Advanced R&BD Center* [Grant: \$88,000; Primary-PI]
- **Research Trends in Digital Twin Applications to Autonomous Driving** 03/2022–04/2022  
Funded by *Hyundai NGV* [Grant: \$1,000; Primary-PI]
- **Distributed Learning System Design and Implementation for Clinical Applications** 02/2022–03/2022  
Funded by *Cipherome* [Grant: \$15,000; 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 (C-Lab)* [Grant: \$12,000; Primary-PI]
- **Visual Recognition Software Implementation using Deep Learning Tools** 05/2019–11/2019  
Funded by *Hyundai Motors Company (Hyundai NGV)* [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]

### 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: \$154,000 (2 yrs); Co-PI]
- **Nano UAV Intelligence Systems Research Lab (NUiSRL) – ADD Military Special Research Center** 10/2020–08/2023  
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) – ITRC** 06/2020–12/2022  
Funded by *Institute for ICT Promotion (IITP)* [2020-0-01637, Grant: \$55,709; Co-PI], PI: Hanyang University (Korea)
- **Human Resource Development for the Biomedical Unstructured Big Data Analysis – ITRC** 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 – ITRC** 02/2020–05/2020  
Funded by *Institute for ICT Promotion (IITP)* [2018-0-01396; Co-PI], PI: Kookmin University (Korea)

### Government-Funded Projects

- **AI Bots Collaborative Platform and Self-Organizing Artificial Intelligence Technology Development** 04/2022–12/2026  
Funded by *Institute for ICT Promotion (IITP)* [2022-0-00907, Grant: \$950,000; Co-PI]
- **Quantum Hyper-Driving: Quantum-Inspired Hyper-Connected and Hyper-Sensing Autonomous Mobility Technologies** 03/2022–02/2025  
Funded by *National Research Foundation of Korea* [2022R1A2C2004869, Grant: \$600,000; Primary-PI]

- **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: \$161,000 (2 yrs); 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 ICT Promotion (IITP)* [2018-0-00170, Grant: \$230,000; 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: \$503,250; 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: \$246,464; 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]

#### Government-Funded Research Institute Projects

- **Autonomous Intelligent COA Search Methods for Cyber-Attacks** 12/2021–11/2022  
Funded by *Agency for Defense Development (ADD)* [UI210009XD, 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]

#### Awards and Fellowship Funds

- **Insung Research Grant Award (2023) – Korea University** 03/2023–02/2024  
For recognizing Korea University professors in research excellence during the first 3 years at Korea University (Top 5%)  
Awarded Project Title: **Quantum Machine Learning for Autonomous Mobility Systems**  
Awarded Project Fund: \$20,000
- **Annenberg Graduate Fellowship Award (2009) – University of Southern California** 08/2009–06/2013  
Awarded with Ph.D. Admission in Computer Science, Viterbi School of Engineering  
Awarded Fund: 4 Year Full Scholarship (Tuition Waiver and \$120,000 Stipend (\$30,000/year for 4 years))

#### 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)

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## Selected Publications

- **6526+ Citations** (H-index: 38+, i10-index 159+), obtained from Google Scholar Profile (as of July 16, 2023)
- Totally, **144** journals, <https://sites.google.com/view/aimlab-kuee/publications/journals>
  - **103** IEEE publications, among them, **68** publications are in **IEEE Magazines and ComSoc/VTS Journals**

## 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 and Book Editing

- *Fundamentals of 6G Communications and Networking*, Springer Nature, October 2023. (Editors: X. Lin, J. Zhang, Y. Liu, [J. Kim](#))

### ■ Book Chapters

- Chapter 6. Dynamic Decision-Making for Stabilized Deep Learning Software Platforms, *Advances and Applications in Deep Learning*, IntechOpen, September 2020. (Editor: M.A. Aceves-Fernandez) ([S. Park](#), [D. Kim](#), [J. Kim](#))
- Chapter 9. Device-to-Device Communications, *Towards 5G: Applications, Requirements and Candidate Technologies*, Wiley, January 2017. (Editors: R. Vannithamby, S. Talwar) ([A.F. Molisch](#), [M. Ji](#), [J. Kim](#), [D. Burghal](#), [A.S. Tehrani](#))
- Chapter 19. 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](#))
- Chapter 17. Millimeter-Wave (mmWave) Radio Propagation Characteristics, *Opportunities in 5G Networks: A Research and Development Perspective*, CRC Press, April 2016. (Editor: F. Hu) ([J. Kim](#))
- Chapter 22. 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](#), [E. Kim](#), [W. Lee](#), [D. Kim](#), [J. Choi](#), [J. Jung](#), [C.K. Shin](#))
- Coverage-Time Optimized Dynamic Clustering for Two-Tiered WM2Nets, *Wireless Mesh Networking*, McGraw-Hill, August 2008. (Editor: G. Aggelou) ([J. Kim](#), [W. Lee](#), [E. Kim](#), [T.K. Shih](#))

## Selected Papers

### ■ Conferences – Top-Tiers and Awarded/Honored

- [ICCAD'23] (Notification: 21-Jul-2023) TBD, [ICCAD \(2023\)](#). ([H. Baek](#), [S. Park](#), [J. Kim](#))
- [CIKM'23] (Notification: 04-Aug-2023) TBD, [CIKM \(2023\)](#). ([S. Park](#), [H. Baek](#), [J. Kim](#))
- [CIKM'23] (Notification: 04-Aug-2023) TBD, [CIKM \(2023\)](#). ([H. Baek](#), [S. Park](#), [J. Kim](#))
- [CIKM'23] (Notification: 04-Aug-2023) TBD, [CIKM \(2023\)](#). ([H. Baek](#), [S. Park](#), [J. Kim](#))
- [CIKM'23] (Notification: 04-Aug-2023) TBD, [CIKM \(2023\)](#). ([S. Park](#), [S.B. Son](#), [Y.K. Lee](#), [S. Jung](#), [J. Kim](#))
- [APWCS'23] Quantum Reinforcement Learning for Large-Scale Multi-Agent Decision-Making in Autonomous Aerial Networks, [APWCS \(2023\)](#). ([S. Park](#), [J. Kim](#))
- [ICDCS'23] EQuaTE: Efficient Quantum Train Engine Design and Demonstration for Dynamic Software Analysis, [ICDCS \(2023\)](#). ([S. Park](#), [H. Feng](#), [W.J. Yun](#), [C. Park](#), [Y.K. Lee](#), [S. Jung](#), [J. Kim](#))
- [ICDCS'23] Multi-Site Clinical Federated Learning using NLP Models and NVFlare, [ICDCS \(2023\)](#). ([W.J. Yun](#), [S. Kim](#), [J. Kim](#))
- [AAAI'23] Quantum Multi-Agent Meta Reinforcement Learning, [AAAI \(2023\)](#). ([W.J. Yun](#), [J. Park](#), [J. Kim](#))
- [AAAI'23] FV-Train: Quantum Convolutional Neural Network Training with a Finite Number of Qubits by Extracting Diverse Features, *AAAI Student Abstract and Poster (2023)*. ([H. Baek](#), [W.J. Yun](#), [J. Kim](#)) (**Finalist (Top 25), Oral Presentation Contest**)
- [CIKM'22] Hierarchical Reinforcement Learning using Gaussian Random Trajectory Generation in Autonomous Furniture Assembly, [CIKM \(2022\)](#). ([W.J. Yun](#), [D. Mohaisen](#), [S. Jung](#), [J.-K. Kim](#), [J. Kim](#))
- [ICTC'22] Reinforcement Learning Empowered Massive IoT Access in LEO-based Non-Terrestrial Networks, *ICTC (2022)*. ([J.-H. Lee](#), [D.P. Selvam](#), [A.F. Molisch](#), [J. Kim](#)) (**Best Paper Award**)
- [WiOpt'22] Cooperative Video Quality Adaptation for Delay-Sensitive Dynamic Streaming using Adaptive Super-Resolution, [WiOpt \(2022\)](#). ([M. Choi](#), [W.J. Yun](#), [J. Kim](#))
- [APWCS'22] DDPG-based Deep Reinforcement Learning for Loitering Munition Mobility Control: Algorithm Design and Visualization, *APWCS (2022)*. ([H. Lee](#), [W.J. Yun](#), [S. Jung](#), [J.-H. Kim](#), [J. Kim](#)) (**IEEE VTS Seoul Chapter Award**)
- [ICML'22] Slimmable Quantum Federated Learning, *ICML Workshop on Dynamic Neural Networks (2022)*. ([W.J. Yun](#), [J.P. Kim](#), [S. Jung](#), [J. Park](#), [M. Bennis](#), [J. Kim](#)) (**Spotlight, Oral Presentation**)
- [ICDCS'22] Quantum Multi-Agent Reinforcement Learning via Variational Quantum Circuit Design, [ICDCS \(2022\)](#). ([W.J. Yun](#), [Y. Kwak](#), [J.P. Kim](#), [H. Cho](#), [S. Jung](#), [J. Park](#), [J. Kim](#))
- [INFOCOM'22] Joint Superposition Coding and Training for Federated Learning over Multi-Width Neural Networks, [INFOCOM \(2022\)](#). ([H. Baek](#), [W.J. Yun](#), [Y. Kwak](#), [S. Jung](#), [M. Ji](#), [M. Bennis](#), [J. Park](#), [J. Kim](#))



- [APWCS'21] Quantum Scheduling for Millimeter-Wave Observation Satellite Constellation, *APWCS* (2021). (J. Kim, Y. Kwak, S. Jung, J.-H. Kim) ([IEEE VTS Seoul Chapter Award](#))
- [APWCS'21] Distributed and Autonomous Aerial Data Collection in Smart City Surveillance Applications, *APWCS* (2021). (H. Lee, S. Jung, J. Kim) ([IEEE VTS Seoul Chapter Award](#))
- [ICOIN'21] Infrastructure-Assisted Cooperative Multi-UAV Deep Reinforcement Energy Trading Learning for Big-Data Processing, *ICOIN* (2021). (S. Jung, W.J. Yun, J. Kim, J.-H. Kim) ([Best Paper Award](#))
- [ICDCS'20] Understanding the Potential Risks of Sharing Elevation Information on Fitness Applications, *ICDCS* (2020). (Ü. Meteriz, N.F. Yildiran, J. Kim, D. Mohaisen)
- [APWCS'19] Joint Offloading and Streaming in Mobile Edges: A Deep Reinforcement Learning Approach, *APWCS* (2019). (S. Park, J. Kim, D. Kwon, M. Shin, J. Kim) ([IEEE VTS Seoul Chapter Award](#))
- [IJCAI'19] Randomized Adversarial Imitation Learning for Autonomous Driving, *IJCAI* (2019). (M. Shin, J. Kim)
- [ICDCS'18] ShmCaffe: A Distributed Deep Learning Platform with Shared Memory Buffer for HPC Architecture, *ICDCS* (2018). (S. Ahn, J. Kim, E. Lim, W. Choi, A. Mohaisen, S. Kang)
- [MM'17] REQUEST: Seamless Dynamic Adaptive Streaming over HTTP for Multi-Homed Smartphone under Resource Constraints, *Multimedia* (2017). (J. Koo, J. Yi, J. Kim, M.A. Hoque, S. Choi)
- [ITA'14] Joint Scheduling and Stochastic Streaming for Device-to-Device Video Delivery, *ITA Workshop* (2014). (J. Kim, A. Turci, G. Caire, A.F. Molisch) ([ITA Graduation Day Talk](#))
- [MobiCom'13] Adaptive Video Streaming for Device-to-Device Mobile Platforms, *MobiCom* (2013). (J. Kim, F. Meng, P. Chen, H.E. Egilmez, D. Bethanabhotla, A.F. Molisch, M.J. Neely, G. Caire, A. Ortega)
- [MobiSys'10] Energy-Efficient Rate-Adaptive GPS-based Positioning for Smartphones, *MobiSys* (2010). (J. Paek, J. Kim, R. Govindan)
- [ICCCN'05] Effect of Localized Optimal Clustering for Reader Anti-Collision in RFID Networks: Fairness Aspect to the Readers, *ICCCN* (2005). (J. Kim, W. Lee, J. Yu, J. Myung, E. Kim, C. Lee)

### ■ Journals and Magazines

#### ◀ Review ▶

- [JSTSP.wip] (WIP, Review since 15-Aug-2023) TBD, *IEEE Journal of Selected Topics in Signal Processing*. (S. Park, G.S. Kim, S.B. Son, J. Kim)
- [Network.wip] (WIP, Review since 15-Nov-2023) SI: Quantum Communications and Networking: Series 2, *IEEE Network*. (J. Kim)
- [Access.wip] (WIP, Review since 31-Aug-2023) Sensing-to-Sky Intermittent Connectivity Realization using Reverse SSH for LTE-Enabled Drone Platforms: Embedded System Design and Measurement Study, *IEEE Access* ([IEEE VTS Section](#)). (J. Kim, S. Park, U. Jo, T. Kim, S. Jung, J. Kim)
- [WC.wip] (WIP, Review since 31-Aug-2023) Dynamic Quantum Federated Learning for Public Safety Applications in Autonomous Vehicles, *IEEE Wireless Communications*. (S. Park, G.S. Park, S. Jung, J. Kim)
- [OJCS.review] (Review since 16-Jul-2023) Real-Time High-Quality Visualization for Volumetric Contents Rendering: A Lyapunov Optimization Framework, *IEEE Open Journal of the Computer Society*. (H. Baek, R. Lee, S. Jung, J. Kim, S. Park)
- [OJCS.review] (Review since 15-Jul-2023) Quantum Reinforcement Learning for Low-Dimensional Spatio-Temporal Prioritization in Metaverse, *IEEE Open Journal of the Computer Society*. (S. Park, H. Baek, J. Kim)
- [TKDE.review] (Review since 02-Jul-2023) SlimQFL: Quantum Federated Learning using Slimmable Neural Networks, *IEEE Transactions on Knowledge and Data Engineering*. (S. Park, H. Baek, H. Lee, S.B. Son, S. Jung, J. Park, M. Bennis, J. Kim)
- [TITS.review] (Review since 26-Jun-2023) Cooperative Multi-Agent Deep Reinforcement Learning for Reliable and Energy-Efficient Mobile Access via Multi-UAV Control, *IEEE Transactions on Intelligent Transportation Systems*. (C. Park, S. Park, S. Jung, C. Cordeiro, J. Kim)
- [TVT.review] (Review since 25-Jun-2023) Neural Myerson Auction for Truthful and Distributed Mobile Charging in UAV-Assisted Digital-Twin Networks, *IEEE Transactions on Vehicular Technology*. (S. Jung, H. Baek, J. Kim)
- [TMC.review] (Review since 17-Jun-2023) Joint Quantum Reinforcement Learning and Stabilized Control for Spatio-Temporal Coordination in Metaverse, *IEEE Transactions on Mobile Computing*. (S. Park, C. Park, S. Jung, M. Choi, S. Cho, J. Kim)
- [TVT.review] (Review since 11-Jun-2023) Markov Decision Policies for Distributed Angular Routing in LEO Satellite Constellation Networks, *IEEE Transactions on Vehicular Technology*. (S. Park, G.S. Kim, S. Jung, J. Kim)
- [Network.review] (Review since 01-Jun-2023) Quantum Jump to Virtual Worlds: High-Quality Multiple Virtual Meta-Space Realization in Metaverse, *IEEE Network*. (S. Park, J. Kim)
- [JSAC.review] (Review since 01-Jun-2023) Spatio-Temporal Multi-Metaverse Adaptive Streaming in Hybrid Quantum-Classical Networks, *IEEE Journal on Selected Areas in Communications*. (S. Park, H. Baek, J. Kim)
- [TNNLS.review] (Review since 01-Jun-2023) Dynamic Quantum Federated Learning for High-Performance Unmanned Aerial Vehicles in Autonomous Surveillance Applications, *IEEE Transactions on Neural Networks and Learning Systems*. (S. Park, S.B. Son, C. Park, S. Jung, J. Kim)
- [Network.review] (Review since 15-May-2023) Quantum Entanglement Software Testing (QuEST) for Dynamic Software Analysis in Autonomous Driving: Design, Implementation, and Visualization, *IEEE Network*. (S. Park, J. Kim)
- [WC.review] (Review since 29-Apr-2023) Embedded Cube Satellites in 6G Roadmap: Design, Implementation, and Future Directions, *IEEE Wireless Communications*. (G.S. Kim, S. Park, J. Kim)
- [Network.review] (Review since 15-Apr-2023) Living on the Quantum Edge: Quantum AI-Unified Cache/Edge Models for Scalable Social Interaction in NISQ-Limited Tactile Internet, *IEEE Network*. (S. Park, J.P. Kim, W.J. Yun, J. Kim)
- [ITSM.review] (Review since 14-Apr-2023) Dynamic Run-Time Software Testing in Quantum-based Autonomous Driving, *IEEE Intelligent Transportation Systems Magazine*. (S. Park, C. Park, W.J. Yun, J. Kim)
- [VTM.review] (Review since 14-Apr-2023) The Matrix: Quantum AI for Interacting Two Worlds in ITS-based Prioritized Metaverse

Spaces, *IEEE Vehicular Technology Magazine*. (S. Park, H. Baek, J. Kim)

[TVT.review] (Review since 28-Mar-2023) Dynamic Quantum Federated Learning for Joint Satellites and Ground Stations using Slimmable Quantum Neural Networks, *IEEE Transactions on Vehicular Technology*. (W.J. Yun, J.P. Kim, S. Park, J. Kim, S. Jung, J. Park)

[TII.review] (Review since 12-Mar-2023) (Double Blind), *IEEE Transactions on Industrial Informatics*. (M. Choi, W.J. Yun, J. Kim)

[TITS.review] (Review since 11-Mar-2023) Intelligent Adaptive and Additive Extra Resource Allocation for Cooperative Awareness Message Broadcasting in Cellular-V2X Networks, *IEEE Transactions on Intelligent Transportation Systems*. (S. Jung, J.-H. Kim, J. Kim)

#### ◀ Revision ▶

[TVT.revision] Age-of-Information Aware Caching and Delivery for Infrastructure-Assisted Connected Vehicles, *IEEE Transactions on Vehicular Technology*. (S. Park, C. Park, S. Jung, M. Choi, J. Kim)

[TGCN.revision] Joint Delay-Sensitive and Power-Efficient Quality Control of Dynamic Video Streaming using Adaptive Super-Resolution, *IEEE Transactions on Green Communications and Networking*. (M. Choi, W.J. Yun, J. Kim)

[TIV.revision] Adaptive Quantum Federated Learning for Autonomous Surveillance Multi-Drone Networks, *IEEE Transactions on Intelligent Vehicles*. (S. Park, C. Park, S. Jung, J. Kim)

[CM.revision] Quantum Multi-Agent Reinforcement Learning for Autonomous Mobility Cooperation, *IEEE Communications Magazine*. (S. Park, J.P. Kim, C. Park, S. Jung, J. Kim)

[TVT.revision] Learning-based Cooperative Mobility Control for Autonomous Drone-Delivery, *IEEE Transactions on Vehicular Technology*. (S. Park, C. Park, J. Kim)

[IC.revision] EQuaTE: Efficient Quantum Train Engine for Run-Time Dynamic Analysis and Visual Feedback in Autonomous Driving, *IEEE Internet Computing*. (S. Park, H. Feng, C. Park, Y.K. Lee, S. Jung, J. Kim)

[IC.revision] Cooperative Multi-Agent Deep Reinforcement Learning using Inter-Agent Communications in Autonomous Vehicles, *IEEE Internet Computing*. (C. Park, R. Lee, S. Park, S. Jung, J. Kim)

[ETRI.revision] Joint Frame Rate Adaptation and Object Recognition Model Selection in Stabilized Surveillance UAV Networks, *ETRI Journal (Wiley)*. (G.S. Kim, H. Lee, S. Park, J. Kim)

[ICTE.revision] Software Simulation and Visualization of Quantum Multi-Drone Reinforcement Learning, *ICT Express (Elsevier)*. (C. Park, J.P. Kim, W.J. Yun, S. Park, S. Jung, J. Kim)

#### ◀ Accept ▶

[TNNLS.accept] Hierarchical Deep Reinforcement Learning-based Propofol Infusion Assistant Framework in Anesthesia, *IEEE Transactions on Neural Networks and Learning Systems*. (W.J. Yun, M. Shin, D. Mohaisen, K. Lee, J. Kim)

[TMC.accept] Learning Location from Shared Elevation Profiles in Fitness Apps: A Privacy Perspective, *IEEE Transactions on Mobile Computing*. (U. Meteriz, N.F. Yildiran, J. Kim, D. Mohaisen)

[MTAP.accept] Stabilized Performance Maximization for GAN-based Real-Time Authentication Image Generation over Internet, *Multimedia Tools and Applications (Springer)*. (J.Y. Shim, S. Jung, J. Kim, J.-K. Kim)

#### ◀ 2023 ▶

[TON'23.12] SlimFL: Federated Learning with Superposition Coding over Slimmable Neural Networks, *IEEE/ACM Transactions on Networking*, 31(6):ppp–ppp (2023). (W.J. Yun, Y. Kwak, H. Baek, S. Jung, M. Ji, M. Bennis, J. Park, J. Kim)

[TWC'23.12] Joint User Clustering, Beamforming, and Power Allocation for mmWave-NOMA with Imperfect SIC, *IEEE Transactions on Wireless Communications*, 22(12):ppp–ppp (2023). (B. Lim, W.J. Yun, J. Kim, Y.-C. Ko)

[TVT'23.12] Two-Stage Self-Adaptive Task Outsourcing Decision Making for Edge-Assisted Multi-UAV Networks, *IEEE Transactions on Vehicular Technology*, 72(12):ppp–ppp (2023). (S. Jung, C. Park, M. Levorato, J.-H. Kim, J. Kim)

[IOTI'23.10] Quantum Multi-Agent Actor-Critic Networks for Cooperative Mobile Access in Multi-UAV Systems, *IEEE Internet of Things Journal*, 10(20):ppp–ppp (2023). (C. Park, W.J. Yun, J.P. Kim, S. Park, T.K. Rodrigues, S. Jung, J. Kim)

[ETRI'23.10] Two Tales of Platoon Intelligence for Autonomous Mobility Control: Enabling Deep Learning Recipes, *ETRI Journal (Wiley)*. (S. Park, H. Lee, C. Park, S. Jung, M. Choi, J. Kim) (Invited Article)

[TIV'23.09] Multi-Agent Reinforcement Learning for Cooperative Air Transportation Services in City-Wide Autonomous Urban Air Mobility, *IEEE Transactions on Intelligent Vehicles*, 8(9):ppp–ppp (2023). (C. Park, G.S. Kim, S. Park, S. Jung, J. Kim)

[NN'23.08] Stereoscopic Scalable Quantum Convolutional Neural Networks, *Neural Networks (Elsevier)*, 165:860–867 (2023). (H. Baek, W.J. Yun, S. Park, J. Kim)

[IOTI'23.06] Quantum Multiagent Actor-Critic Neural Networks for Internet-Connected Multirobot Coordination in Smart Factory Management, *IEEE Internet of Things Journal*, 10(11):9942–9952 (2023). (W.J. Yun, J.P. Kim, S. Jung, J.-H. Kim, J. Kim)

[ICTE'23.06] Quantum Distributed Deep Learning Architectures: Models, Discussions, and Applications, *ICT Express (Elsevier)*, 9(3):486–491 (2023). (Y. Kwak, W.J. Yun, J.P. Kim, H. Cho, J. Park, M. Choi, S. Jung, J. Kim)

[Access'23.05] Entropy-Aware Similarity for Balanced Clustering: A Case Study with Melanoma Detection, *IEEE Access*, 11:46892–46902 (2023). (S.B. Son, S. Park, J. Kim)

[ComNet'23.04] Self-Adaptive End-to-End Resource Management for Real-Time Monitoring in Cyber-Physical Systems, *Computer Networks (Elsevier)*, 225:109669 (2023). (H.-C. Jo, H.-W. Jin, J. Kim)

[ComNet'23.04] Truthful and Performance-Optimal Computation Outsourcing for Aerial Surveillance Platforms via Learning-based Auction, *Computer Networks (Elsevier)*, 225:109651 (2023). (S. Jung, J.-H. Kim, D. Mohaisen, J. Kim)

[CIBM'23.04] Deep Reinforcement Learning-based Propofol Infusion with a 3,000-subject Dataset in Anesthesia, *Computers in Biology and Medicine (Elsevier)*, 156:106739 (2023). (W.J. Yun, M. Shin, S. Jung, J. Ko, H.-C. Lee, J. Kim)

[Access'23.03] Audio-to-Visual Cross-Modal Generation of Birds, *IEEE Access*, 11:27719–27729 (2023). (J.Y. Shim, J. Kim, J.-K. Kim)

[Access'23.02] Workload-Aware Scheduling using Markov Decision Process for Infrastructure-Assisted Learning-Based Multi-UAV Surveillance Networks, *IEEE Access (IEEE VTS Section)*, 11:16533–16548 (2023). (S. Park, C. Park, S. Jung, J.-H. Kim, J. Kim)



- [TITS'23.01] Self-Configurable Stabilized Real-Time Detection Learning for Autonomous Driving Applications, *IEEE Transactions on Intelligent Transportation Systems*, 24(1):885–890 (2023). (W.J. Yun, S. Park, J. Kim, D. Mohaisen)
- ◀ 2022 ▶
- [JCN'22.12] Neural Myerson Auction for Truthful and Energy-Efficient Autonomous Aerial Data Delivery, *Journal of Communications and Networks*, 24(6):730–741 (2022). (H. Lee, S. Kwon, S. Jung, J. Kim)
- [JCN'22.12] Parallelized and Randomized Adversarial Imitation Learning for Safety-Critical Self-Driving Vehicles, *Journal of Communications and Networks*, 24(6):710–721 (2022). (W.J. Yun, M. Shin, S. Jung, S. Kwon, J. Kim)
- [TII'22.10] Cooperative Multi-Agent Deep Reinforcement Learning for Reliable Surveillance via Autonomous Multi-UAV Control, *IEEE Transactions on Industrial Informatics*, 18(10):7086–7096 (2022). (W.J. Yun, S. Park, J. Kim, M. Shin, S. Jung, D. Mohaisen, J.-H. Kim)
- [ICTE'22.09] Trustworthy Handover in LEO Satellite Mobile Networks, *ICT Express (Elsevier)*, 8(3):432–437 (2022). (S. Jung, M.-S. Lee, J. Kim, M.-Y. Yun, J. Kim, J.-H. Kim)
- [TVT'22.07] Joint Pilot Design and Channel Estimation using Deep Residual Learning for Multi-Cell Massive MIMO under Hardware Impairments, *IEEE Transactions on Vehicular Technology*, 71(7):7599–7612 (2022). (B. Lim, W.J. Yun, J. Kim, Y.-C. Ko)
- [ITU'22.07] Dynamic Resource Scheduling for Real-Time Group Broadcasting in 6G Cellular Vehicular Networks, *ITU Journal on Future and Evolving Technologies*, 3(1):81–88 (2022). (S. Jung, M. Levorato, J. Kim)
- [ISJ'22.06] Securing Heterogeneous IoT with Intelligent DDoS Attack Behavior Learning, *IEEE Systems Journal*, 16(2):1974–1983 (2022). (N.-N. Dao, T. Phan, U. Sa'ad, J. Kim, T. Bauschert, D.-T. Do, S. Cho)
- [CSM'22.06] Recent and Future Evolution of Wi-Fi, *IEEE Communications Standards Magazine*, 6(2):8–11 (2022). (E. Au, L. Wilhelmsson, T. Baykas, J. Kim)
- [TMC'22.05] Supremo: Cloud-Assisted Low-Latency Super-Resolution in Mobile Devices, *IEEE Transactions on Mobile Computing*, 21(5):1847–1860 (2022). (J. Yi, S. Kim, J. Kim, S. Choi)
- [TVT'22.05] Stabilized Detection Accuracy Maximization using Adaptive SAR Image Processing in LEO Networks, *IEEE Transactions on Vehicular Technology*, 71(5):5661–5665 (2022). (K. Kim, J.-H. Lee, S. Jung, J. Kim, J.-H. Kim)
- [ISJ'22.03] LiteZKP: Lightning Zero-Knowledge Proof-based Blockchains for IoT and Edge Platforms, *IEEE Systems Journal*, 16(1):112–123 (2022). (E. Boo, J. Kim, J. Ko)
- [TVT'22.02] Quality-Aware Deep Reinforcement Learning for Streaming in Infrastructure-Assisted Connected Vehicles, *IEEE Transactions on Vehicular Technology*, 71(2):2002–2017 (2022). (W.J. Yun, D. Kwon, M. Choi, J. Kim, G. Caire, A.F. Molisch)
- [SR'22.01] Feasibility Study of Multi-Site Split Learning for Privacy-Preserving Medical Systems under Data Imbalance Constraints in COVID-19, X-Ray, and Cholesterol Dataset, *Scientific Reports (Nature)*, 12:1534 (2022). (Y.J. Ha, G. Lee, M. Yoo, S. Jung, S. Yoo, J. Kim)
- ◀ 2021 ▶
- [JRTIP'21.10] Adaptive and Stabilized Real-Time Super-Resolution Control for UAV-Assisted Smart Harbor Surveillance Platforms, *Journal of Real-Time Image Processing (Springer)*, 18(5):1815–1825 (2021). (S. Jung, J. Kim)
- [ISJ'21.09] Intelligent Active Queue Management for Stabilized QoS Guarantees in 5G Mobile Networks, *IEEE Systems Journal*, 15(3):4293–4302 (2021). (S. Jung, J. Kim, J.-H. Kim)
- [Access'21.09] Spatio-Temporal Split Learning for Privacy-Preserving Medical Platforms: Case Studies with COVID-19 CT, X-Ray, and Cholesterol Data, *IEEE Access*, 9:121046–121059 (2021). (Y.J. Ha, M. Yoo, G. Lee, S. Jung, S. Choi, J. Kim, S. Yoo)
- [TVT'21.08] Infrastructure-Assisted On-Driving Experience Sharing for Millimeter-Wave Connected Vehicles, *IEEE Transactions on Vehicular Technology*, 70(8):7307–7321 (2021). (S. Jung, J. Kim, M. Levorato, C. Cordeiro, J.-H. Kim)
- [TMC'21.06] A Personalized Preference Learning Framework for Caching in Mobile Networks, *IEEE Transactions on Mobile Computing*, 20(6):2124–2139 (2021). (A. Malik, K.S. Kim, J. Kim, W.-Y. Shin)
- [TVT'21.06] Orchestrated Scheduling and Multi-Agent Deep Reinforcement Learning for Cloud-Assisted Multi-UAV Charging Systems, *IEEE Transactions on Vehicular Technology*, 70(6):5362–5377 (2021). (S. Jung, W.J. Yun, M. Shin, J. Kim, J.-H. Kim)
- [Access'21.06] Joint Mobile Charging and Coverage-Time Extension for Unmanned Aerial Vehicles, *IEEE Access*, 9:94053–94063 (2021). (S. Park, M. Choi, W.-Y. Shin, J. Kim)
- [ICTE'21.06] Truthful Electric Vehicle Charging via Neural-Architectural Myerson Auction, *ICT Express (Elsevier)*, 7(2):196–199 (2021). (H. Lee, S. Jung, J. Kim)
- [PIEEE'21.05] Communication-Efficient and Distributed Learning Over Wireless Networks: Principles and Applications, *Proceedings of the IEEE*, 109(5):796–819 (2021). (J. Park, S. Samarakoon, A. Elgabli, J. Kim, M. Bennis, S.-L. Kim, M. Debbah)
- [TWC'21.04] Probabilistic Caching and Dynamic Delivery Policies for Categorized Contents and Consecutive User Demands, *IEEE Transactions on Wireless Communications*, 20(4):2685–2699 (2021). (M. Choi, A.F. Molisch, D.-J. Han, D. Kim, J. Kim, J. Moon)
- [JCN'21.04] Stabilized Adaptive Sampling Control for Reliable Real-Time Learning-based Surveillance Systems, *Journal of Communications and Networks*, 23(2):129–137 (2021). (D. Kim, S. Park, J. Kim, J.-y. Bang, S. Jung)
- [JCN'21.04] Dynamic Video Delivery using Deep Reinforcement Learning for Device-to-Device Underlaid Cache-Enabled Internet-of-Vehicle Networks, *Journal of Communications and Networks*, 23(2):117–128 (2021). (M. Choi, M. Shin, J. Kim)
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- **Conferences – GLOBECOM/ICC/VTC and Workshops/Demos/Posters in Top-Tiers**
- [ICDCS'23] Coordinated Multi-Agent Reinforcement Learning for Unmanned Aerial Vehicle Swarms in Autonomous Mobile Access Applications, *ICDCS Poster* (2023). (C. Park, H. Lee, W.J. Yun, S. Park, S. Jung, J. Kim)
- [ICC'23] Multi-Agent Deep Reinforcement Learning for Efficient Passenger Delivery in Urban Air Mobility, *ICC* (2023). (C. Park, S. Park, G.S. Kim, S. Jung, J.-H. Kim, J. Kim)
- [AAAI'23] 3D Scalable Quantum Convolutional Neural Networks for Point Cloud Data Processing in Classification Applications, *AAAI Workshop on AI to Accelerate Science and Engineering* (2023). (H. Baek, W.J. Yun, J. Kim)
- [ICDCS'22] AoI-Aware Markov Decision Policies for Caching, *ICDCS Ph.D. Student Symposium* (2022). (S. Park, S. Jung, M. Choi, J. Kim)
- [ICDCS'22] Quality-Aware Real-Time Augmented Reality Visualization under Delay Constraints, *ICDCS Poster* (2022). (R. Lee, S. Park, S. Jung, J. Kim)
- [VTC'22-Spring] Adaptive and Stabilized Streaming for Edge-Assisted Connected Vehicles under Heterogeneous Computing Constraints, *VTC* (2022-Spring). (R. Lee, H. Lee, S. Park, J. Kim)
- [VTC'22-Spring] Random Access Protocol Learning in LEO Satellite Networks via Reinforcement Learning, *VTC* (2022-Spring). (J.-H. Lee, H. Seo, J. Park, M. Bennis, J. Kim, Y.-C. Ko)
- [ICML'21] Communication and Energy Efficient Slimmable Federated Learning via Superposition Coding and Successive Decoding, *ICML Workshop on Federated Learning for User Privacy and Data Confidentiality* (2021). (H. Baek, W.J. Yun, S. Jung, M. Ji, J. Kim, J. Park, M. Bennis)
- [DSN'21] Spatio-Temporal Split Learning, *DSN Supplemental Volume* (2021). (S. Park, S. Jung, M. Choi, J. Kim)
- [INFOCOM'21] Visualization of Deep Reinforcement Autonomous Aerial Mobility Learning Simulations, *INFOCOM Demo* (2021). (G. Lee, W.J. Yun, S. Jung, J. Kim, J.-H. Kim)
- [ICML'20] XOR Mixup: Privacy-Preserving Data Augmentation for One-Shot Federated Learning, *ICML Workshop on Federated Learning for User Privacy and Data Confidentiality* (2020). (M. Shin, C. Hwang, J. Kim, J. Park, M. Bennis, S.-L. Kim)
- [ICC'20] User Scheduling and Power Allocation for Content Delivery in Caching Helper Networks, *ICC* (2020). (M. Choi, A.F. Molisch, J. Kim)
- [GLOBECOM'19] Multi-Agent Deep Reinforcement Learning for Cooperative Connected Vehicles, *GLOBECOM* (2019). (D. Kwon, J. Kim)
- [ICCV'19] Deep Multi-modal Unsupervised Pen Pressure Stylization, *ICCV Demo* (2019). (D. Kim, J. Kim)
- [DSN'19] Privacy-Preserving Deep Learning Computation for Geo-Distributed Medical Big-Data Platforms, *DSN Supplemental Volume* (2019). (J. Jeon, J. Kim, J. Kim, K. Kim, A. Mohaisen, J.-K. Kim)
- [MobiSys'19] Multi-Agent Deep Reinforcement Learning for Connected Vehicles, *MobiSys Poster* (2019). (D. Kwon, S. Park, J. Kim)
- [MobiSys'19] Light-Weight Programming Language for Blockchain, *MobiSys Demo* (2019). (J. Kim, J. Kim)
- [ICML'19] Adversarial Imitation Learning via Random Search in Lane Change Decision-Making, *ICML Workshop on AI for Autonomous Driving* (2019). (M. Shin, J. Kim)
- [ICC'19] Probabilistic Caching Policy for Categorized Contents and Consecutive User Demands, *ICC* (2019). (M. Choi, D. Kim, D.-J. Han, J. Kim, J. Moon)
- [CCS'18] Secure Compute-VM: Secure Big Data Processing with SGX and Compute Accelerators, *CCS Workshop on System Software for Trusted Execution* (2018). (S. Yoo, H. Kim, J. Kim)
- [MobiSys'18] Neural Network Syntax Analyzer for Embedded Standardized Deep Learning, *MobiSys Workshop on Embedded and Mobile Deep Learning* (2018). (M. Shin, J. Kim, A. Mohaisen, J. Park, K.H. Lee)
- [SECON'18] Recipient-Oriented Transaction for Preventing Double Spending Attacks in Private Blockchain, *SECON Poster* (2018). (H. Lee, M. Shin, K.S. Kim, Y. Kang, J. Kim)
- [AsiaCCS'18] Mining with Proof-of-Probability in Blockchain, *AsiaCCS Poster* (2018). (S. Kim, J. Kim)
- [ICSE'18] A Novel Shared Memory Framework for Distributed Deep Learning in High-Performance Computing Architecture, *ICSE Companion Volume* (2018). (S. Ahn, J. Kim, S. Kang)
- [SOSP'17] A Reliable, Self-Adaptive Face Identification Framework via Lyapunov Optimization, *SOSP Workshop on AI Systems* (2017). (D. Kim, J. Kim, J.Y. Bang)
- [SIGCOMM'16] A Longitudinal Analysis of .i2p Leakage in the Public DNS Infrastructure, *SIGCOMM Poster* (2016). (S.H. Jeong, A.R. Kang, J. Kim, H.K. Kim, A. Mohaisen)
- [INFOCOM'16] Buffer-Stable Adaptive Per-Module Power Allocation for Energy-Efficient Millimeter-Wave Modular Antenna Array (MAA) Platforms, *INFOCOM Poster* (2016). (J. Kim)
- [GLOBECOM'15] 60 GHz Frequency Sharing Study between Fixed Service Systems and Small-Cell Systems with Modular Antenna Arrays, *GLOBECOM Workshop on Millimeter-Wave Backhaul and Access* (2015). (J. Kim, L. Xian, R. Arefi, A.S. Sadri)
- [SOSP'15] A Case for Bad big.LITTLE Switching: How to Scale Power-Performance in SI-HMP, *SOSP Workshop on Power-Aware Computing and Systems* (2015). (S. Yoo, Y. Shim, S. Lee, S.-A. Lee, J. Kim)
- [GLOBECOM'14] Required Frequency Rejection in 39 GHz Millimeter-Wave Small Cell Systems, *GLOBECOM Industry Program* (2014). (J. Kim, L. Xian, A. Maltsev, R. Arefi, A.S. Sadri)
- [ICC'14] Quality-Aware Millimeter-Wave Device-to-Device Multi-Hop Routing for 5G Cellular Networks, *ICC* (2014). (J. Kim, A.F. Molisch)
- [ICC'13] Quality-Aware Coding and Relaying for 60 GHz Real-Time Wireless Video Broadcasting, *ICC* (2013). (J. Kim, Y. Tian, S. Mangold, A.F. Molisch)
- [VTC'06-Spring] Energy-Aware Distributed Topology Control for Coverage-Time Optimization in Clustering-Based Heterogeneous Sensor Networks,

## Patents (Granted), *totally*, 66

- **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)
- **21 Korean Patents:** (KR 102472809), (KR 102444449), (KR 102442891), (KR 102433897), (KR 102370599), (KR 102340895), (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)

## Teaching Experience, Research Supervision, and Professional Activities

### Teaching Experience

#### ■ Korea University – Graduate Courses, *Faculty Member*

- Sensor Networks (ECExxx): Spring 2023
- IT R&D Policies 1 (ECE723): Fall 2020
- Design and Analysis of Wireless Communication Systems (ECE721): Spring 2021
- Advanced Network Theory (ECE657): Fall 2022
- Smart Mobile Platform (ECE654): Fall 2021, Fall 2020, Fall 2019
- Advanced Topics in Socialware IT (ECE545): Spring 2022
- Wireless and Mobile Networks (ECE522): Spring 2020
- Wireless Network 2 (ITH525) Fall 2022
- Wireless Network 1 (ITH524) Spring 2021

#### ■ Korea University – Undergraduate Courses, *Faculty Member*

- Introduction to Artificial Intelligence (IWC420): Winter 2022 (12/2022–01/2023), Winter 2021 (12/2021–01/2022)
- Data Communications (KECE316): Fall 2020
- Digital System Design and Laboratory (KECE210): Fall 2020
- Probability and Random Process (KECE209): Spring 2023, Spring 2022 (*Best Teaching Award, Top 20%*), Spring 2021 (*Best Teaching Award, Top 20%*), Spring 2020
- Digital System (KECE207): Spring 2020
- Computer Language and Laboratory (EGRN151): Fall 2022, Fall 2021 (*Granite Tower Best Teaching Award, Top 5%*), Fall 2020 (*Best Teaching Award, Top 20%*), Fall 2019 (*Granite Tower Best Teaching Award, Top 5%*)
- Object-Oriented Programming (SEMI104): Fall 2021 (*Best Teaching Award, Top 20%*)
- Introduction to Computers (SEMI103): Spring 2021 (*Granite Tower Best Teaching Award, Top 5%*)
- Future Mobility Technology (GEQR075): Spring 2023, Spring 2022 (*Granite Tower Best Teaching Award, Top 5%*)

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

- Optimal Design Theory and Applications (Graduate): Spring 2019, Spring 2018, Spring 2017
- Topics in Computer Science and Engineering (Graduate): Fall 2018, Fall 2017, Fall 2016
- Numerical Analysis (Undergraduate): Spring 2019
- Compiler Design (Undergraduate): Spring 2019, Spring 2018, Spring 2017
- Principles of Programming Languages (Undergraduate): Fall 2018, Fall 2017, Fall 2016
- Algorithm Analysis (Undergraduate): Fall 2016
- Operating Systems (Undergraduate): Spring 2017, Spring 2016
- Calculus (Undergraduate): Spring 2017, Spring 2016
- Mobile Application Development (Undergraduate): 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 USC (co-advised by Prof. Andreas F. Molisch)*), **Professor at Kyung Hee University**, Korea
- Dr. Soyi Jung (03/2021–08/2021, *Jointly with UC-Irvine (co-advised by Prof. Marco Levorato)*), **Professor at Ajou University**, Korea
- Dr. Soohyun Park (09/2023–Present)

#### ■ Ph.D. Course Students and Alumni

- Soohyun Park (*active*, 03/2019–08/2023), *Postdoctoral Scholar* at **Korea University**, Korea  
– Dissertation: "Advanced Learning for Time-Average Optimization and Software Analysis in Quantum-based Multi-Agent Systems"
- Hankyul Baek (*active*, 03/2021–02/2024 (expected)), *Postdoctoral Scholar* at **Korea University**, Korea
- Hyunsoo Lee (*active*, 03/2021–)
- Seok Bin Son (*active*, 09/2022–)

- Chanyoung Park (*active*, 09/2022–)
- Gyu Seon Kim (*active*, 03/2023–)
- **M.S. Course Students and Alumni**
  - *Academia*: Kyeongseon Kim (09/2017–08/2019, POSTECH)
  - *Industry*: Dohyun Kwon (03/2018–02/2020, Hyundai Motors Group), Dohyun Kim (03/2018–02/2020, Naver), MyungJae Shin (03/2018–02/2020, Naver), Jaeho Choi (03/2019–02/2021, Korea Meteorological Administration (*Military Service Exception*))
- **Ph.D. Course Students and Alumni (Tight Collaboration for Ph.D. Dissertation)**
  - Dr. Seungyo Ryu (Primary Advisor: Prof. Dongseung Kim at Korea University), *Researcher* at LG Electronics, Korea
- **Intel Corporation (Santa Clara, California, USA), Graduate Interns**
  - Dr. Minseok Choi, Ph.D. in EE from KAIST (02/2016–07/2016), now with Kyung Hee University, Korea
  - Dr. Hidekazu Shimodaira, Ph.D. in EEE from Tokyo Institute of Technology (07/2015–12/2015), now with NTT DOCOMO, 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

## Talks and Presentations (Selected)

- **IEEE Distinguished Lectures**
  - *Federated Learning for Medical and Mobile Platforms: Motivation, Challenges, and Potential Solutions*  
California State University, Long Beach (Long Beach, CA, USA, 01/2020), Hosted by Prof. Sean Kwon and Prof. Henry Yeh  
IEEE Systems Council – IEEE Coastal Los Angeles Section Chapter
- **IEEE Conference Tutorials and Special Session Talks**
  - IEEE ICUFN 2022 Tutorial (Barcelona, Spain, 07/2022), *A Paradigm Shift in Future Networks with Quantum Deep Learning*
  - IEEE ICOIN 2022 Tutorial (Online, 01/2022), *Advanced Deep Learning Methods for Autonomous Mobility*
  - IEEE ICUFN 2021 Tutorial (Jeju, Korea, 08/2021), *Distributed and Split Deep Learning: Theory and Applications*
  - IEEE ICAIIC 2021 Tutorial (Online, 04/2021), *Multi-Agent Deep Reinforcement Learning for Connected and Autonomous Vehicles*
  - IEEE ICTC 2019 Special Session Talk (Jeju, Korea, 10/2019), *Advanced Deep Learning Methods and Their Applications to Distributed and Network Platforms*
  - IEEE ICOIN 2019 Tutorial (Kuala Lumpur, Malaysia, 01/2019), *Distributed Platform Research for Emerging Deep Learning Applications*
  - IEEE ICC 2018 Tutorial (Kansas City, MO, USA, 05/2018), *Securing the Internet of Things: A Machine Learning Approach (Making Machine Learning Practical)*, Joint Presentation with Prof. Aziz Mohaisen (University of Central Florida, Orlando, FL, USA)
- **Korean (Local) Conference Tutorials and Special Session Talks**
  - 2023 KICS Summer Conference Tutorial (Jeju, 06/2023), *Quantum Machine Learning: Theory and Trends*
  - 2023 KIISE Summer Conference Information Network Society Special Session (Jeju, 06/2023), *Quantum Neural Networks*
  - 2022 KIPS Fall Conference Tutorial (Chuncheon, 11/2022), *Quantum Deep Learning Basics*
  - 2022 Korea A.I. Conference Tutorial (Jeju, 09/2022), *Trends in Deep Reinforcement Learning*
  - 2022 KICS Summer Conference Tutorial (Jeju, 06/2022), *Quantum Multi-Agent Deep Reinforcement Learning*
  - 2022 KIEES Winner Conference Tutorial (Online, 02/2022), *Deep Learning Theory and Implementation*
  - 2021 Korea A.I. Conference Tutorial (Jeju, 09/2021), *Understanding the Potential Risks of Sharing Elevation Information on Fitness Applications*
  - 2021 JCCI Mobile Machine Learning Special Session (Online, 04/2021), *Multi-Agent Deep Reinforcement Learning for Autonomous Vehicles*
  - 2020 Korea A.I. Conference Tutorial (Jeju, 12/2020), *Randomized Adversarial Imitation Learning for Autonomous Driving*
  - 2020 KICS Fall Conference Tutorial (Seoul, 11/2020), *Trends in Multi-Agent Deep Reinforcement Learning for Distributed Computing*
  - 2020 KICS Summer Conference Tutorial (Jeju, 08/2020), *Deep Learning Computation for Economic Theory and Its Applications*
  - 2020 KICS Winter Conference Tutorial (Kangwon, 02/2020), *Deep Learning Applications to Computer Networking*
  - 2020 KICS Winter Conference Tutorial (Kangwon, 02/2020), *Deep Neural Network Basics*
  - 2019 KICS Fall Conference Special Session Talk (Seoul, 11/2019), *AI Methods for Network and Mobility Platform*
  - 2019 IEEK Hyundai Motors Special Session (Jeju, 06/2019), *Explainable AI (XAI) and Imitation Learning for Automotive Applications*
  - 2019 KIPS Spring Conference Tutorial (Seoul, 05/2019), *Deep Learning Basics and Representative Models*
  - 2019 KICS Winter Conference Tutorial (Kangwon, 01/2019), *Deep Learning Methods for Advanced Network*
  - 2017 KICS Summer Conference Tutorial (Jeju, 06/2017), *GPU Computing Platforms and Software for Deep Learning*
  - 2017 KCC Summer Conference Special Session (Jeju, 06/2017), *Dynamic Control and Software for Next-Generation Distributed Platforms*
  - 2017 KICS Winter Conference Tutorial (Kangwon, 01/2017), *Machine Learning Techniques for Mobile Computing*
- **Industry Presentations (Selected)**
  - *International*: Huawei Research Center (Text-Aware Image Understanding Workshop) (Online, 11/2021), Ericsson-LG (R&D Hackathon / AI Learning Challenge – Keynote Speech) (Seoul, Korea, 05/2021), Huawei Research Center (Deep Learning/Machine Learning for Computer Vision) (Online, 09/2020), Huawei Research Center (Fundamental and Applied Problems of Machine Learning) (Nizhny Novgorod, Russia, 12/2019), City University of Hong Kong (Hong Kong, 11/2018), Intel Communications and Devices Group (iCDG) [Cellular Modem TechTalk] (Santa Clara, CA, USA, 01/2016), Nokia Research Center at Berkeley (Berkeley, CA, USA, 08/2014), Qualcomm Research Center (San Diego, CA, USA, 02/2014)
  - *Korea*: Solvit System (Seoul), Korea Institute of Machinery & Materials (Daejeon), Korea Meteorological Administration (Seoul), Hyundai NGV (Seoul), SK Telecom (SKT) (Seoul), Agency for Defense Development (ADD) (Seoul), SK Hynix (Icheon), Naver Labs - Robotics Lab (Pankyo), ETRI (Daejeon), KT AI Tech Center (Seoul), LG Electronics (Seoul), Posco ICT (Pankyo), LG U+ (Seoul), SK Broadband (Seoul), Korea Electronics Technology Institute (KETI) (Pankyo), Korea Electric Power Corporation (KEPCO) Research Institute (Daejeon), Samsung Electronics (Hwasung)
- **Prototyping at Industry Exhibitions**
  - *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 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)

#### ■ Demonstration at Academic Conferences

- *EQuaTE: Efficient Quantum Train Engine Design and Demonstration for Dynamic Software Analysis; IEEE ICDCS 2023* (Hong Kong, China)
- *Multi-Site Clinical Federated Learning using NLP Models and NVFlare; IEEE ICDCS 2023* (Hong Kong, China)
- *Quantum Multi-Agent Reinforcement Learning via Variational Quantum Circuit Design; IEEE ICDCS 2022* (Bologna, Italy)
- *Visualization of Deep Reinforcement Autonomous Aerial Mobility Learning Simulations; IEEE INFOCOM 2021* (Online)
- *Deep Multi-modal Unsupervised Pen Pressure Stylization; IEEE/CVF ICCV 2019* (Seoul, Korea)
- *Light-Weight Programming Language for Blockchain; ACM MobiSys 2019* (Seoul, Korea)
- *mmWave MAA Client Access & Backhaul Platform; IEEE GLOBECOM 2015 (Industry Demonstration ID-14)* (San Diego, CA, USA)
- *mmWave Modular Antenna Array for Next-Generation Wireless Networks; IEEE GLOBECOM 2014 (Expo)* (Austin, TX, USA)
- *Adaptive Video Streaming for Device-to-Device Mobile Platforms; ACM MobiCom 2013* (Miami, FL, USA)

### Conference Activities and Services

#### ■ Organizing Committee (OC) Activities

- **IEEE WiOpt:** 2022 (Organizer, *Caching, Computing and Delivery in Wireless Networks Workshop (CCDWN)*)
- **IEEE GLOBECOM:** 2015 (Organizer, *Workshop on Millimeter-Wave Backhaul and Access (mmWave)*)
- **IEEE ICC:** 2022 (Patronage Chair)
- **IEEE ICTC:** 2022 (TPC 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:** 2022 (Workshop Chair), 2021 (Workshop Chair), 2021 (Workshop Organizing Chair, *Artificial Intelligence Emerging Applications (AIEA) Workshop*)
- **IEEE ICAIIC:** 2019 (Publication Chair)
- **IEEE VTS APWCS:** 2022 (Finance Chair), 2021 (Finance Co-Chair), 2017 (Publication Vice Chair)
- **IEEE ICOIN:** 2023 (Workshop Co-Chair), 2023 (Workshop Organizing Chair, *Workshop on Artificial Intelligence and Mobility*), 2022 (Workshop Organizing Chair, *Workshop on Artificial Intelligence and Mobility*), 2021 (Workshop Organizing Chair, *Workshop on Artificial Intelligence and Mobility*), 2020 (Workshop Organizing Chair, *Workshop on Artificial Intelligence and Mobility*)
- **IEEE ICASSP:** 2018 (Special Session Organizing Chair, *Special Session on Cybersecurity and Privacy*)
- **IEEE APCC:** 2022 (Local Arrangement Chair)
- **IEEE ICEIC:** 2021 (Local Arrangement Chair)
- **ACM CoNEXT:** 2019 (Poster Session Chair)

#### ■ Technical Program Committee (TPC) Chair-Level Activities

- **CCNC:** 2022 (Track Chair for T7 (*Security, Privacy and Content Protection*))
- **ICTC:** 2022 (TPC Vice Chair for Administration)
- **ICAIIC:** 2023 (TPC Co-Chair), 2022 (TPC Co-Chair), 2021 (TPC Co-Chair), 2020 (TPC Co-Chair), 2019 (TPC Co-Chair)
- **ICOIN:** 2021 (TPC Vice Chair), 2020 (TPC Vice Chair), 2019 (TPC Vice Chair), 2018 (TPC Vice Chair)
- **NAS:** 2019 (Track Co-Chair for Network Track)
- **GLOBECOM:** 2015 (TPC Chair for the *Workshop on Millimeter-Wave Backhaul and Access*)

#### ■ Technical Program Committee (TPC) Non-Chair-Level Activities

- **2023:** ICC (Wireless Communications Symposium), ICC (Integrated Sensing and Communication Track), ICC (Reconfigurable Intelligent Surfaces and Smart Environments Track), MASS, WCNC, ICOIN, IE
- **2022:** GLOBECOM (Selected Areas in Communications – Machine Learning for Communications), MASS, ICC (Wireless Communications Symposium), WCNC, VTC-Fall, COMNETSAT, ICAIIC, ICTC, ICUFN, ICOIN, IPDPS (*Heterogeneity in Computing Workshop*), ICC, WCSP, CyberneticsCom, ICEIC, MSN (Track 3: Security, Privacy, Trust, and Blockchain), ICNGC
- **2021:** GLOBECOM (Selected Areas in Communications – Machine Learning for Communications), GLOBECOM (IoT/N), ICC (Wireless Communications Symposium), ICCCN, MSN, COMNETSAT, ICTC, ICTC (*Workshop on Intelligent 6G Communication Systems*), ICTC (*Workshop on KU-AIER (Korea University, A.I. Engineering Research)*), WCNC, ICC, IGESSC, ICAIIC, ICUFN, ICOIN, MASS, EuCAP, ICEIC, ICNGC, ITC-CSCC
- **2020:** GLOBECOM (Ad-hoc and Sensor Networks Symposium), ICTC, WCNC, WCNC (*Workshop on Aerial Communications in 5G and Beyond Networks*), IGESSC, ICUFN, ICOIN, Blockchain, ICC, COMNETSAT
- **2019:** ICTC, ICC, IGESSC, ICUFN, VTC-Spring, ICDCS (Distributed Green Computing & Energy Management), NAS (Network Track), Blockchain, MobiHoc, EuCAP, IE, WISA, SecureComm, ICPADS (Security & Dependable Computing)
- **2018:** ICTC, IGESSC, ICUFN, WCSP, APWCS, ICOIN, AsiaCCS (*Workshop on Security in Cloud Computing*), SigTelCom, ATC, IE
- **2017:** ICUFN, ICTC, IE
- **2016:** ICUFN, VTC-Spring
- **2015:** VTC-Spring, EuCAP
- **2014:** VTC-Fall
- **2012:** MASS (*Workshop on Internet of Things Technology and Architectures*)

### 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>