

## Highlights

### Research Milestones

- **157 Journals** (among them, **104 IEEE Journals**), <https://sites.google.com/view/aimlab-kuee/publications/journals> – 130 Published / Accepted (among them, **79 IEEE**), **10** Under-Revision, and **17** Under-Review Journals
- **6920+ Citations** (H-index: 40+, i10-index 162+), obtained from Google Scholar Profile (as of October 29, 2023)
- **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)*
- **71+ 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)**: 6,660,784 USD  $\approx$  6,660,784,000 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))**
  - *Postdoctoral Scholars*: Minseok Choi at Kyung Hee University (2018–2020), Soyi Jung at Ajou University (2021)
- **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 (2023–)**, *IEEE Internet of Things Journal* IEEE ComSoc, Computer Society, Sensors 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

## 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

## 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**
    - \* *Deputy Vice President* (02/2022–), **Office of Academic Affairs**
    - \* *Dean* (06/2021–08/2023), **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), 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* (2023–), **IEEE Internet of Things Journal**
  - *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/Wiley**
  - *Editor* (2021–), **ICT Express** (Area: AI for ICT Applications)
  - *Guest Editor* (2022), **ETRI Journal** (S.I. on Autonomous Unmanned Aerial/Ground Vehicles and their Applications)
  - *Guest Editor* (2022), **Computer Networks** (S.I. on ML and AI for the Internet of Things, 5G, and Beyond)
  - *Guest Editor* (2022), **ICT Express** (S.I. on Artificial Intelligence and Machine Learning Approaches to Communication)
  - *Guest Editor* (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)**  
*"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*  
*"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*  
*"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*
  - 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*  
*"Quantum Scheduling for Millimeter-Wave Observation Satellite Constellation"*
- **IEEE VTS Seoul Chapter Award (2021)** – *IEEE Vehicular Technology Society*  
*"Distributed and Autonomous Aerial Data Collection in Smart City Surveillance Applications"*
- **IEEE ICOIN Best Paper Award (2021)** – *IEEE Computer Society*  
*"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*  
*"Reliable Offloading Target Selection using Deep Reinforcement Learning for Large Fire Accident"*
- **IEEE Systems Journal Best Paper Award (2020)** – *IEEE Systems Council*  
*(Top 7 among 793 accepted papers in 2019 (Top 0.88%))*  
*"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*  
*"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)

- **Korea Electronics Technology Institute (KETI) President Award (06/2023)** – *2023 KICS Summer Conference*  
"Grid environment design and grouping for optimal relay station placement"
- **Haedong Paper Award (02/2023)** – *KICS*  
"Dynamic quantum federated learning framework at satellites and ground stations using slimmable quantum neural networks"
- **Excellence Paper Award (02/2023)** – *2023 KICS Winter Conference*  
"Self-learning-based hybrid MAC for military UAV networks"
- **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*  
"Trends in neural architecture search for object detection"
- **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*  
"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*  
"Deep learning based non-orthogonal pilot design for massive MIMO"
- **Excellence Paper Award (Undergraduate) (06/2021)** – *2021 KICS Summer Conference*  
"Deep reinforcement learning visualization and simulations using Unity-RL in an autonomous driving environment"
- **Encouragement Paper Award (11/2020)** – *2020 KICS Fall Conference*  
"UAV trajectory optimization via multi-agent deep reinforcement learning"
- **Encouragement Paper Award (06/2020)** – *2020 KICS Summer Conference*  
"3D modeling and WebVR implementation using Azure Kinect, Open3D, and Three.js"
- **Encouragement Paper Award (02/2020)** – *2020 KICS Winter Conference*  
"Quantum heuristic solver using QAOA for the maximum independent set problem"
- **Encouragement Paper Award (02/2020)** – *2020 KICS Winter Conference*  
"Multi-drone scheduling for high-reliable and high-performance UAV-based surveillance networking"
- **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 Conferences)

- **Highly-Cited (70+ citations)**, as of October 29, 2023
- (MobiSys'10) [637+] *Energy-efficient rate-adaptive GPS-based positioning for smartphones*
- (TON'16) [178+] *Quality-aware streaming and scheduling for device-to-device video delivery*
- (PIEEE'21) [154+] *Communication-efficient and distributed learning over wireless networks: Principles and applications*
- (ISJ'20) [146+] *Toward characterizing blockchain-based cryptocurrencies for highly accurate predictions, (Best Paper Award)*
- (TII'20) [142+] *Cooperative management for PV/ESS-enabled electric vehicle charging stations*
- (TVT'19) [129+] *Auction-based charging scheduling with deep learning framework for multi-drone networks*
- (TII'17) [121+] *Residential demand response for renewable energy resources in smart grid systems*
- (TCE'07) [114+] *Movement-aware vertical handoff of WLAN and mobile WiMAX for seamless ubiquitous access*
- (JCN'14) [111+] *Fast millimeter-wave beam training with receive beamforming*
- (IOTJ'18) [103+] *Energy-efficient mobile charging for wireless power transfer in Internet of Things networks*
- (IOTJ'20) [086+] *Multiagent DDPG-based deep learning for smart ocean federated learning IoT networks*
- (ICTC'20) [076+] *A tutorial on quantum convolutional neural networks (QCNN)*
- (JSAC'18) [074+] *Wireless video caching and dynamic streaming under differentiated quality requirements*
- (ICBC'19) [071+] *Mempool optimization for defending against DDoS attacks in PoW-based blockchain systems*
- (IOTJ'18) [067+] *Internet of Things for smart manufacturing system: Trust issues in resource allocation*
- (TII'15) [067+] *Energy-efficient dynamic packet downloading for medical IoT platforms*
- (FL@ICML'20) [066+] *XOR mixup: Privacy-preserving data augmentation for one-shot federated learning*
- (TBC'13) [065+] *Joint scalable coding and routing for 60 GHz real-time live HD video streaming applications*
- (TII'22) [063+] *Cooperative multi-agent deep reinforcement learning for reliable surveillance via autonomous multi-UAV control*
- (ICCCN'05) [063+] *Effect of localized optimal clustering for reader anti-collision in RFID networks: Fairness aspects to the readers*
- (TVT'21) [062+] *Orchestrated scheduling and multi-agent deep reinforcement learning for cloud-assisted multi-UAV charging systems*

## **R&D Projects (Totally, 6,660,784 USD ≈ 6,660,784,000 KRW)**

### Industry-Funded Projects

- |   |                 |
|---|-----------------|
| • <b>Advancement Technology Development for Torpedo Deception Strategies in Submarines</b><br>Funded by <i>LIG Nex1</i> [Grant: \$700,000; Primary-PI]  | 11/2022–11/2026 |
| • <b>Advancement Technology Development for Submarine Target Identification and Engagement Support Intelligence</b><br>Funded by <i>LIG Nex1</i> [Grant: \$300,000; Primary-PI]                   | 11/2022–11/2026 |
| • <b>Mapping between Real World and Virtual Reality (VR) for End-Edged Cloud Real-Time VR Servers</b><br>Funded by <i>Samsung Advanced Institute of Technology</i> [Grant: \$286,000; Primary-PI] | 09/2020–09/2024 |
| • <b>Quantum Machine Learning-based Objection Detection for Point Cloud and its Acceleration</b><br>Funded by <i>Hyundai Motors Group</i> [Grant: \$110,000; Primary-PI]                          | 12/2022–11/2023 |
| • <b>Routing Algorithms for LEO Satellite Networks</b><br>Funded by <i>Solvit System</i> [Grant: \$27,500; Primary-PI]  | 12/2022–08/2023 |
| • <b>Optimal Positioning Algorithms for Wide-Area Relaying Networks</b><br>Funded by <i>Solvit System</i> [Grant: \$22,000; Primary-PI]   | 12/2022–08/2023 |
| • <b>Distributed Learning Algorithms to Build AI Models with Multi-Center Clinical Data</b><br>Funded by <i>Cipherome</i> [Grant: \$12,000; Primary-PI]   | 11/2022–02/2023 |
| • <b>Cellular/Wi-Fi Handover Technology Development</b><br>Funded by <i>LG Electronics CTO Division – Smart Mobility Lab., Advanced R&amp;BD Center</i> [Grant: \$88,000; Primary-PI]             | 02/2022–12/2022 |
| • <b>Research Trends in Digital Twin Applications to Autonomous Driving</b><br>Funded by <i>Hyundai NGV</i> [Grant: \$1,000; Primary-PI]  | 03/2022–04/2022 |
| • <b>Distributed Learning System Design and Implementation for Clinical Applications</b><br>Funded by <i>Cipherome</i> [Grant: \$15,000; Primary-PI]  | 02/2022–03/2022 |
| • <b>Super-Resolution Performance Optimization in Mobile Platforms</b><br>Funded by <i>Samsung SDS</i> [Grant: \$15,000; Primary-PI]  | 05/2020–08/2020 |
| • <b>Deep Learning Algorithms for mVOC Concentration Analysis</b><br>Funded by <i>Samsung Electronics (C-Lab)</i> [Grant: \$12,000; Primary-PI]   | 03/2020–06/2020 |

- **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

- **NOMA-based Resource Allocation Research in Space-Air-Ground Integrated Networks** 09/2023–11/2023  
Funded by *Electronics and Telecommunications Research Institute* [Grant: \$20,900; Primary-PI]
- **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)

### **Selected Publications**

- **6920+ Citations** (H-index: 40+, i10-index 162+), obtained from Google Scholar Profile (as of October 29, 2023)
- Totally, **157** journals, <https://sites.google.com/view/aimlab-kuee/publications/journals>  
– **104** IEEE publications, among them, **74** 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, December 2023. (Editors: X. Lin, J. Zhang, Y. Liu, J. Kim)

#### ■ Book Chapters

- Chapter 30. Network Security and Trustworthiness, *Fundamentals of 6G Communications and Networking*, Springer, December 2023. (Editor: X. Lin, J. Zhang, Y. Liu, J. Kim) ((S. Jung, S. Park, S.B. Son, H. Lee, J. Kim)
- Chapter 29. Semantic Communications and Networking, *Fundamentals of 6G Communications and Networking*, Springer, December 2023. (Editor: X. Lin, J. Zhang, Y. Liu, J. Kim) (W.J. Yun, S. Park, R. Lee, J. Park, Y.-C. Ko, J. Kim)
- Chapter 28. Convergence of 6G and Wi-Fi Networks, *Fundamentals of 6G Communications and Networking*, Springer, December 2023. (Editor: X. Lin, J. Zhang, Y. Liu, J. Kim) (H. Lee, S. Park, M. Yoo, C. Park, H. Baek, J. Kim)
- Chapter 26. UAV Communications and Networks, *Fundamentals of 6G Communications and Networking*, Springer, December 2023. (Editor: X. Lin, J. Zhang, Y. Liu, J. Kim) (S. Park, J.-H. Lee, S. Jung, J. Kim)
- Chapter 22. AI-Native Network Algorithms and Architectures, *Fundamentals of 6G Communications and Networking*, Springer, December 2023. (Editor: X. Lin, J. Zhang, Y. Liu, J. Kim) (H. Lee, S. Park, H. Baek, C. Park, S. Son, J. Park, J. Kim)
- Chapter 21. AI-Native Communications, *Fundamentals of 6G Communications and Networking*, Springer, December 2023. (Editor: X. Lin, J. Zhang, Y. Liu, J. Kim) (H. Baek, H. Lee, S. Park, H. Lee, J. Park, J. Kim)
- Chapter 20. Network Disaggregation, *Fundamentals of 6G Communications and Networking*, Springer, December 2023. (Editor: X. Lin, J. Zhang, Y. Liu, J. Kim) (S. Park, C. Park, J.P. Kim, M. Choi, J. Kim)
- 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

- [FSE'24] (Notification: 13-Dec-2023) TBD, **FSE (2024)**. ([S. Park](#), [H. Baek](#), [J.W. Yoon](#), [Y.K. Lee](#), [J. Kim](#))
- [INFOCOM'24] (Notification: 01-Dec-2023) TBD, **INFOCOM (2024)**. ([S. Park](#), [H. Baek](#), [S. Jung](#), [J. Park](#), [M. Bennis](#), [J. Kim](#))
- [INFOCOM'24] (Notification: 01-Dec-2023) TBD, **INFOCOM (2024)**. ([S. Park](#), [C. Park](#), [G.S. Kim](#), [S. Jung](#), [Z. Han](#), [J. Kim](#))
- [AAAI'24] (Notification: 02-Nov-2023) TBD, **AAAI (2024)**. ([H. Baek](#), [S. Park](#), [J. Kim](#))
- [CIKM'23] Quantum Split Learning for Privacy-Preserving Information Management, **CIKM (2023)**. ([S. Park](#), [H. Baek](#), [J. Kim](#))
- [CIKM'23] Logarithmic Dimension Reduction for Quantum Neural Networks, **CIKM (2023)**. ([H. Baek](#), [S. Park](#), [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] EQaTE: 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 Recursive and Attentive 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

- [[Magazine.wip](#)] (WIP) Embedded Cube Satellites in 6G Roadmap: Design, Implementation, and Future Directions, [IEEE Magazine](#). (G.S. Kim, S. Park, [J. Kim](#))
- [[TWC.wip](#)] (WIP) Slimmable Federated Reinforcement Learning for Energy-Efficient Proactive Caching, [IEEE Transactions on Wireless Communications](#). (H. Baek, G.S. Kim, S. Park, [J. Kim](#), A.F. Molisch)
- [[TWC.review](#)] (Review since 28-Oct-2023) Joint Control and Communications Framework for Mission-Critical Multi-UAV Networks, [IEEE Transactions on Wireless Communications](#). (G.S. Kim, S. Park, S. Jung, D. Mohaisen, [J. Kim](#))
- [[TIV.review](#)] (Review since 24-Oct-2023) Fast Quantum Convolution Neural Networks for Low-Complexity Object Detection in Autonomous Driving Applications, [IEEE Transactions on Intelligent Vehicles](#). (H. Baek, D. Kim, [J. Kim](#))
- [[Access.review](#)] (Review since 18-Oct-2023) Quantum Reinforcement Learning for Spatio-Temporal Prioritization in Metaverse, [IEEE Access](#). (S. Park, H. Baek, [J. Kim](#))
- [[TVT.review](#)] (Review since 17-Oct-2023) Dynamic Quantum Federated Learning for Unmanned Aerial Vehicles in Autonomous Surveillance Applications, [IEEE Transactions on Vehicular Technology](#). (S. Park, S.B. Son, S. Jung, [J. Kim](#))
- [[WC.review](#)] (Review since 15-Oct-2023) Sustainable Spatio-Temporal Quantum Multi-Agent Reinforcement Learning for Autonomous Networks, [IEEE Wireless Communications](#). (S. Park, [J. Kim](#))
- [[TIV.review](#)] (Review since 15-Oct-2023) Neural Myerson Auction for Truthful and Distributed Mobile Charging in UAV-Assisted Digital-Twin Networks, [IEEE Transactions on Intelligent Vehicles](#). (S. Jung, H. Baek, [J. Kim](#))
- [[CM.review](#)] (Review since 14-Oct-2023) Quantum Jump to Virtual Worlds: High-Quality Multiple Virtual Meta-Space Realization in Metaverse, [IEEE Communications Magazine](#). (S. Park, [J. Kim](#))
- [[TON.review](#)] (Review since 05-Oct-2023) Joint Quantum Reinforcement Learning and Neural Myerson Auction for High-Quality Digital-Twin Services in Multi-Tier Networks, [IEEE/ACM Transactions on Networking](#). (S. Park, G.S. Kim, S.B. Son, [J. Kim](#))
- [[IOTJ.review](#)] (Review since 24-Sep-2023) LEO-Assisted Deep Reinforcement Learning for Multi-UAV Positioning in QoS-Aware Differentiated Aerial Internet Services, [IEEE Internet of Things Journal](#). ([J. Kim](#), S. Park, S. Jung, C. Cordeiro)
- [[OJVT.review](#)] (Review since 23-Sep-2023) Software Design and Visualization for Quantum Multi-Agent Reinforcement Learning in Multi-Drone Mobility Control, [IEEE Open Journal of Vehicular Technology](#). (S. Park, S. Jung, [J. Kim](#))
- [[CM.review](#)] (Review since 20-Aug-2023) Quantum Entanglement Software Testing (QuEST) for Dynamic Software Analysis in Autonomous Driving: Design, Implementation, and Visualization, [IEEE Communications Magazine](#). (S. Park, [J. Kim](#))
- [[IET.review](#)] (Review since 08-Aug-2023) Scalable Quantum Convolutional Neural Networks, [IET Electronics Letters](#). (H. Baek, S. Park, [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](#))
- [[JSAC.review](#)] (Review since 01-Jun-2023) (SI: The Quantum Internet: Principles, Protocols, and Architectures), [IEEE Journal on Selected Areas in Communications](#). (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)
- ◀ **Revision** ▶
- [[IOTJ.revision](#)] Markov Decision Policies for Distributed Angular Routing in LEO Mobile Satellite Constellation Networks, [IEEE Internet of Things Journal](#). (S. Park, G.S. Kim, S. Jung, [J. Kim](#))
- [[IOTJ.revision](#)] Intelligent Extra Resource Allocation for Cooperative Awareness Message Broadcasting in Cellular-V2X Networks, [IEEE Internet of Things Journal](#). (S. Jung, J.-H. Kim, [J. Kim](#))
- [[Access.revision](#)] Sensing-to-Sky Intermittent Connectivity Realization for LTE-Enabled Drone Platforms: Embedded Design, Measurement Study, and Positioning Applications, [IEEE Access \(IEEE VTS Section\)](#). ([J. Kim](#), S. Park, U. Jo, T. Kim, S. Jung, [J. Kim](#))
- [[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](#))
- [[IET.revision](#)] Two-Stage Architectural Fine-Tuning for Neural Architecture Search in Efficient Transfer Learning, [IET Electronics Letters](#). (S. Park, S.B. Son, Y.K. Lee, S. Jung, [J. Kim](#))
- [[CM.revision](#)] The Matrix: Quantum AI for Interacting Two Worlds in Prioritized Metaverse Spaces, [IEEE Communications Magazine](#). (S. Park, H. Baek, [J. Kim](#))
- [[Access.revision](#)] Enhancing Cost-Effective 5G Virtualized RAN Pooling Gain on Clouds: An Intelligent Auto-Scaling Approach, [IEEE Access](#). (K. Cho, [J. Kim](#), S. Jung)
- [[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](#))
- [[ITSM.revision](#)] Dynamic Software Testing for Run-Time Program Analysis in Quantum-based Autonomous Driving Applications, [IEEE Intelligent Transportation Systems Magazine](#). (S. Park, C. Park, W.J. Yun, [J. Kim](#))
- [[TIV.revision](#)] Intelligent Caching for Seamless High-Quality Streaming in Vehicular Networks: A Multi-Agent Reinforcement Learning Approach, [IEEE Transactions on Intelligent Vehicles](#). (M. Choi, [J. Kim](#))
- ◀ **Accept** ▶
- [[TVT.accept](#)] Learning-based Cooperative Mobility Control for Autonomous Drone-Delivery, [IEEE Transactions on Vehicular Technology](#). (S. Park, C. Park, [J. Kim](#))
- [[TGCN.accept](#)] 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](#))
- [[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)
- [TWC.accept] 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)
- [CM.accept] Quantum Multi-Agent Reinforcement Learning for Autonomous Mobility Cooperation, *IEEE Communications Magazine*, 61(10):ppp–ppp (2023). (S. Park, J.P. Kim, C. Park, S. Jung, J. 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)
- [IOTI'23.11] Quantum Multi-Agent Actor-Critic Networks for Cooperative Mobile Access in Multi-UAV Systems, *IEEE Internet of Things Journal*, 10(22):ppp–ppp (2023). (C. Park, W.J. Yun, J.P. Kim, S. Park, T.K. Rodrigues, S. Jung, J. Kim)
- [TVT'23.11] Two-Stage Self-Adaptive Task Outsourcing Decision Making for Edge-Assisted Multi-UAV Networks, *IEEE Transactions on Vehicular Technology*, 72(11):ppp–ppp (2023). (S. Jung, C. Park, M. Levorato, J.-H. Kim, 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)
- [ETRI'23.10] 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)
- [ETRI'23.10] Special Issue on Autonomous Unmanned Aerial/Ground Vehicles and their Applications, *ETRI Journal (Wiley)*. (J. Kim, Y.-C. Lee, J.H. Lee, J.S. Choi)
- [IC'23.09-10] EQuaTE: Efficient Quantum Train Engine for Run-Time Dynamic Analysis and Visual Feedback in Autonomous Driving, *IEEE Internet Computing*, 27(5):24–31 (2023). (S. Park, H. Feng, C. Park, Y.K. Lee, S. Jung, J. Kim)
- [OJCS'23.09] Real-Time High-Quality Visualization for Volumetric Contents Rendering: A Lyapunov Optimization Framework, *IEEE Open Journal of the Computer Society*, 4:243–252 (2023). (H. Baek, R. Lee, S. Jung, J. Kim, S. Park)
- [TIV'23.08] Multi-Agent Reinforcement Learning for Cooperative Air Transportation Services in City-Wide Autonomous Urban Air Mobility, *IEEE Transactions on Intelligent Vehicles*, 8(8):4016–4030 (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)
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[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, *VTC (2006-Spring)*. (J. Kim, J. Choi, W. Lee)

[VTC'05-Spring] Low-Energy Localized Clustering: An Adaptive Cluster Radius Configuration Scheme for Topology Control in Wireless Sensor

## Patents (Granted), *totally, 71*

- **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)
- **26 Korean Patents:** (KR 102573880), (KR 102523056), (KR 102522930), (KR 102500352), (KR 102492736), (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 2023, 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 Computer Science (IWC293): Winter 2023-2024
- Introduction to Artificial Intelligence (IWC420): Winter 2023-2024, Winter 2022-2023, Winter 2021-2022
- 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 2023, 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 (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), *Postdoctoral Scholar at Korea University*, Korea  
– Dissertation: “Adaptive Deep Neural Network Optimization: Algorithmic and Architectural Frameworks”
- Hyunsoo Lee (*active*, 03/2021–)



- Seok Bin Son (*active*, 09/2022–)
- Gyu Seon Kim (*active*, 03/2023–)
- Emily Jimin Roh (*active*, 03/2024–)
- Seongjoon Lee (*active*, 03/2024–)
- **M.S. Course Students and Alumni**
  - Kyeongseon Kim (09/2017–08/2019), *Researcher* at **POSTECH**, Korea
  - Dohyun Kwon (03/2018–02/2020), *Researcher* at **Hyundai Motors Group**, Korea
  - Dohyun Kim (03/2018–02/2020), *Researcher* at **Naver**, Korea
  - MyungJae Shin (03/2018–02/2020), *Researcher* at **Naver**, Korea
  - Jaeho Choi (03/2019–02/2021), *Researcher (Military Service Exception)* at **Korea Meteorological Administration**, Korea
  - JaeHyun Chung (*active*, 09/2023–)
  - Chaemoon Lim (*active*, 03/2024–)
  - Yeryeong Cho (*active*, 03/2024–)
- **Ph.D. Course Students and Alumni (Tight Collaboration for Ph.D. Dissertation)**
  - Seungyo Ryu (Primary Advisor: Prof. Dongseung Kim at Korea University), *Researcher* at **LG Electronics**, Korea
- **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**, Korea
  - 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) (Panky), 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/TSN), 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>