

Joongheon Kim

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

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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, Department of Electrical Engineering)
Communications, Information, Learning & Quantum (CLIQ) Group
 - M.S. (05/2014) in Computer Science with specialization in High Performance Computing and Simulations
 - M.S. (05/2012) in Electrical Engineering
- **Korea University – College of Informatics** *Seoul, Republic of Korea*
 - M.S. (03/2004–02/2006) in Computer Science and Engineering (Advisor: Prof. Wonjun Lee)
 - B.S. (03/1999–02/2004) in Computer Science and Engineering

Professional Affiliations

- **Korea University**, Seoul, Republic of Korea
 - Associate Professor (09/2019–), School of Electrical Engineering (Graduate: Department of Electrical and Computer Engineering)
 - Adjunct Professor (03/2023–02/2028), Department of Communications Engineering (Samsung Electronics)
 - Adjunct Professor (11/2022–02/2028), Department of Future Science and Technology Business (Graduate School)
 - Adjunct Professor (03/2021–02/2026), Department of Semiconductor Engineering (SK Hynix)
- **Chung-Ang University**, Seoul, Republic of Korea
 - Assistant Professor (03/2016–08/2019), School of Computer Science and Engineering
- **Intel Corporation**, Santa Clara (Silicon Valley), California, USA
 - Systems Engineer (09/2013–02/2016), Platform Engineering Group
- **University of Southern California – Viterbi School of Engineering**, Los Angeles, California, USA
 - Ph.D. Student in Computer Science (08/2009–08/2014), Thomas Lord Department of Computer Science
 - Annenberg Graduate Fellow (2009), 4-Year Full Scholarship for the Ph.D. Program in Computer Science
 - Research Assistant (01/2011–08/2014), Communications, Information, Learning & Quantum (CLIQ) Group
 - Teaching Assistant (01/2012–05/2013), Computer Science and Electrical Engineering Major Courses
- **InterDigital**, San Diego, California, USA
 - Intern (05/2012–08/2012), Wireless Systems Evolution Department
- **LG Electronics – CTO Division**, Seoul, Republic of Korea
 - Research Engineer (01/2006–08/2009), Multimedia Research Lab, Seocho R&D Campus

Professional Affiliations – Visiting for Quantum Machine Learning Research Collaboration

- **Seoul National University Hospital**, Seoul, Republic of Korea
 - Visiting Professor (10/2025–09/2026), Healthcare AI Research Institute (HARI) (Host: Prof. Hyung-Chul Lee)

University and Government R&D/Administrative Positions

- **Korea University**, Seoul, Republic of Korea
 - Director (07/2024–12/2031), Net-Zero CAFE (Connectivity and Autonomy for Future Ecosystem) Research Center
 - Vice Department Chair (01/2025–08/2025), Academic Affairs, School of Electrical Engineering
 - Deputy Vice President (02/2022–08/2024), Office of Academic Affairs
 - Dean (06/2021–08/2023), Center for Teaching and Learning (CTL)
- **National Research Foundation of Korea**, Daejeon, Republic of Korea
 - Review Board (11/2024–10/2026), Area: Communications (Communication-based Convergence)

Awards and Honors

Research and Academic Excellence (International)

- | | |
|---|---------|
| • Finalist (Top 35), AAAI Student Abstract and Poster Session – Oral Presentation | 01/2026 |
| • Finalist (Top 25), AAAI Student Abstract and Poster Session – Oral Presentation Contest | 02/2023 |
| • IEEE ICTC Best Paper Award – IEEE Communications Society | 10/2022 |
| • Spotlight, Oral Presentation – ICML Workshop on Dynamic Neural Networks (2022) | 07/2022 |
| • IEEE MMTC Best Journal Paper Award – IEEE Communications Society | 2021 |
| • IEEE ICOIN Best Paper Award – IEEE Computer Society | 01/2021 |
| • IEEE MMTC Outstanding Young Researcher Award – IEEE Communications Society | 2020 |

• IEEE Systems Journal Best Paper Award – <i>IEEE Systems Council</i>	2020
• Next Generation and Standards (NGS) Division Recognition Award – <i>Intel Corporation</i>	Q1/2015
• Annenberg Graduate Fellowship Award – <i>University of Southern California</i>	2009–2013
Awarded with Ph.D. Admission: 4 Year Full Scholarship (Tuition Waiver and \$120,000 Stipend (\$30,000/year for 4 years))	
• IEEE Seoul Section Student Paper Contest	2024 (Bronze), 2024 (Bronze), 2023 (Bronze), 2020 (Bronze), 2019 (Gold)
• IEEE VTS Seoul Chapter Award – <i>IEEE Vehicular Technology Society</i>	2023, 2022, 2022, 2021, 2021, 2019

Research and Academic Excellence (Korea Regional, since 2016)

• HFR Paper Award (Area: Quantum Technologies) – <i>KICS</i>	11/2025
• Best Paper Award, The Journal of KICS – <i>KICS</i>	11/2024
• HFR Paper Award (Area: Quantum Technologies and Quantum Communications) – <i>KICS</i>	11/2023
• Korea Electronics Technology Institute (KETI) President Award – <i>KICS</i>	06/2023
• Haedong Paper Award – <i>KICS</i>	02/2023, 06/2021
• Haedong Young Scholar Award – <i>KICS and Haedong Foundation</i>	12/2018

For recognizing a researcher under the age of 40 who has made outstanding contributions to IT R&D

Korea University

• Granite Tower Best Research Award (Top 3%) – <i>Korea University</i>	06/2025
For recognizing top 3% research achievement among Korea University faculty members in 2024	
• Best Research Achievement Award – <i>Korea University, School of Electrical Engineering</i>	03/2025
• Insung Research Grant Award (Top 5%) – <i>Korea University</i>	01/2023
For recognizing professors in top 5% research excellence during the first 3 years at Korea University	
• Granite Tower Best Teaching Award (Top 5%), Totally, 7 times	
– KECE209-02 (Spring 2025), Probability and Random Process (80 students)	
– GECT002-06 (Spring 2025), Software Programming Basics (703 students)	
– GECT002-01 (Spring 2024), Software Programming Basics (297 students)	
– GEQR075 (Spring 2022), Future Mobility Technology (198 students)	
– EGRN151-06 (Fall 2021), Computer Language and Laboratory (98 students)	
– SEMI103 (Spring 2021), Introduction to Computers (28 students)	
– EGRN151-07 (Fall 2019), Computer Language and Laboratory (100 students)	
• Best Teaching Award (Top 20%), Totally, 7 times	
– GECT002-09 (Spring 2025), Software Programming Basics (837 students)	
– GECT002-02 (Spring 2024), Software Programming Basics (240 students)	
– GECT002-08 (Spring 2024), Software Programming Basics (375 students)	
– KECE209-02 (Spring 2022), Probability and Random Process (90 students)	
– SEMI104 (Fall 2021), Object-Oriented Programming (22 students)	
– KECE209-02 (Spring 2021), Probability and Random Process (92 students)	
– EGRN151-09 (Fall 2020), Computer Language and Laboratory (129 students)	

Academic and University Services (International)

• Certificate of Appreciation – <i>IEEE Future Networks, AI/ML Working Group</i>	08/2025
• Certificate of Appreciation – <i>IEEE/IFIP WiOpt (2024)</i>	10/2024
• Best Editor Award – <i>ICT Express (Elsevier)</i>	07/2023
• 2022 Best Chapter Award, IEEE Vehicular Technology Society Chapter , Awarded as a Treasure	2022
• Appreciation Recognition – <i>Daegu Gyeongbuk Institute of Science and Technology (DGIST)</i>	2021
• Certificate of Appreciation – <i>Department of Computer Science, University of Southern California</i>	2010

Academic and University Services (Korea Regional)

• Outstanding Contribution Award	
– The Korean Institute of Communication Sciences and Information Sciences (KICS)	2025, 2024, 2021, 2019
– Korean Institute of Information Scientists and Engineers (KIISE) Information Network Society	2023, 2022
– Open Standards and ICT Association (OSIA)	2025, 2021
– The Institute of Electronics and Information Engineers (IEIE)	2025
• Commemorative Plaque, KICS Excellent Lecture (Topic: Quantum Reinforcement Learning)	2025
• Best Research Group Award , <i>KICS Research Group in Quantum Communications and Quantum Computing</i> (Group Leader)	2025
• Appreciation Recognition – <i>Daegu Gyeongbuk Institute of Science and Technology (DGIST)</i>	2021

Student Awards (International)

• Young Scientist Award (ICSANE 2025), Awarded to <i>Minji Lee</i>	11/2025
• IEEE Vehicular Technology Society Student Scholarship Award (2025) , Awarded to <i>Gyu Seon Kim</i>	10/2025
• IEEE ICDCS Best Runner-Up Poster Paper Award (2025) , Awarded to <i>Seok Bin Son, Soohyun Park</i>	07/2025

R&D Projects

University-Wide/Center Projects

- Net-Zero CAFE Research Center (07/2024–12/2031), ([Center Director](#)) ITRC (Korea Univ)
- Intelligent 6G Wireless Access System Research Center (04/2021–12/2025) 6G AI Research Center (Korea Univ)
- K-Starlink: Dynamic Reconfigurable and Intelligent Space-Terrestrial Networks (06/2021–05/2024) Basic Research Lab (Ajou)
- Nano UAV Intelligence Systems Research Lab (10/2020–08/2023) ADD Military Special Research Center (Kwangwoon)
- 5G/Unmanned Vehicle Research Center (5G/UV-RC) (06/2020–12/2022) ITRC (Hanyang)
- Human Resource Development for the Biomedical Unstructured Big Data Analysis (08/2018–12/2021) ITRC (SNU-Hospital)
- Novel Data Science Driven Framework for Efficient Network Design (06/2017–05/2020) Basic Research Lab (Chung-Ang)
- Intelligent Internet of Energy (IoE) Data Research Center (02/2020–05/2020) ITRC (Kookmin)

Industry-Funded Projects

- Advancement Technology Development for Torpedo Deception Strategies in Submarines (11/2022–11/2026) LIG Nex1
- Advancement Tech Dev for Submarine Target Identification and Engagement Support Intelligence (11/2022–11/2026) LIG Nex1
- Mapping between Real World and VR for End-Edged Cloud Real-Time VR Servers (09/2020–11/2025) Samsung Electronics
- Research on Learning-based Swarm Mission Planning Algorithms (03/2024–02/2025) LIG Nex1
- Quantum Machine Learning-based Objection Detection for Point Cloud and its Acceleration (12/2022–04/2024) Hyundai Motors
- Routing Algorithms for LEO Satellite Networks (12/2022–08/2023) Solvit System
- Optimal Positioning Algorithms for Wide-Area Relaying Networks (12/2022–08/2023) Solvit System
- Distributed Learning Algorithms to Build AI Models with Multi-Center Clinical Data (11/2022–02/2023) Cipherome
- Cellular/Wi-Fi Handover Technology Development (02/2022–12/2022) LG Electronics CTO Division (Smart Mobility Lab)
- Research Trends in Digital Twin Applications to Autonomous Driving (03/2022–04/2022) Hyundai NGV
- Distributed Learning System Design and Implementation for Clinical Applications (02/2022–03/2022) Cipherome
- Super-Resolution Performance Optimization in Mobile Platforms (05/2020–08/2020) Samsung SDS
- Deep Learning Algorithms for mVOC Concentration Analysis (03/2020–06/2020) Samsung Electronics (C-Lab)
- Visual Recognition Software Implementation using Deep Learning Tools (05/2019–11/2019) Hyundai Motors
- A Priori Techniques Research for Efficient Multi-Edge Computing (06/2017–12/2017) Samsung Electronics (Software Center)

Government-Funded Projects

- Quantum AI Empowered Second-Life Platform Technology (07/2024–12/2031), ([Software Star-Lab](#)) IITP
- Quantum-Empowered Spatio-Temporal Multi-Scale Digital Twin System (03/2025–02/2028) NRF
- 6GARROW: 6G AI-Native Integrated RAN-Core Networks (09/2024–08/2027) IITP
- AI Bots Collaborative Platform and Self-Organizing Artificial Intelligence Technology Development (04/2022–12/2026) IITP
- Development of Integrated Development Framework that supports Automatic Neural Network Generation and Deployment optimized for Runtime Environment (04/2021–12/2025) IITP
- Quantum Hyper-Driving: Quantum-Inspired Hyper-Connected and Hyper-Sensing Autonomous Mobility (03/2022–02/2025) NRF
- Korea-Japan Joint Seminar Project for Generative and Multi-Modal AI Technologies (10/2023–09/2024) NRF
- Integrated Perception Technology Developments for Public Safety Platforms (06/2019–05/2023) NRF
- Development of Quantum Deep Reinforcement Learning Algorithm using QAOA (10/2019–04/2022) NRF
- mmWave Radar and Deep Reinforcement Learning based Optimal Policy Autonomous Driving (06/2019–02/2022) NRF
- Development of Privacy-Reinforcing Distributed Transfer-Iterative Learning Algorithm (07/2019–12/2021) MHW
- Virtual Presence in Moving Objects through 5G (PriMO-5G) (06/2018–06/2021) IITP
- Distributed Secure Platform for Scalable Clinical OMOP CDM Models (04/2019–12/2020) MHW
- mmWave High-Speed Networking Platform Design for Next-Generation Convergence Services (06/2016–05/2019) NRF
- Feasibility Study of 60 GHz IEEE 802.11ad for Virtual Reality (VR) Platforms (04/2017–12/2017) IITP

Government-Funded Research Institute Projects

- Discovering Quantum-Advantage Cases for Industry Adoption (09/2025–11/2025) KTL
- LEO Satellite Routing Research using Large Language Model and Reinforcement Learning (05/2025–11/2025) ETRI
- Research on Generative Quantum Machine Learning Models (04/2025–10/2025) ETRI Affiliated Research Institute
- Quantum Reinforcement Learning for Satellite Backhaul Routing in Disaster Networks (05/2024–11/2024) ETRI
- NOMA-based Resource Allocation Research in Space-Air-Ground Integrated Networks (09/2023–11/2023) ETRI
- Autonomous Intelligent COA Search Methods for Cyber-Attacks (12/2021–11/2022) ADD
- Research on Intelligent Agent-based CPS Security and Reliability (04/2021–11/2021) TTA
- Multi-GPU based Automotive HPC Platform Development (04/2020–10/2020) ETRI
- Cooperative Deep Reinforcement Learning for Online Game Multi-Agents (04/2020–08/2020) ETRI
- Verification Testbed Implementation for Privacy-Preserving Trust Data Generation (10/2019–11/2019) ETRI
- Measurement and Analysis of Multi-Task GPU Scheduling Delays (05/2019–10/2019) ETRI
- Probabilistic Decision Making and Econometric Methods for Micro-Grid (05/2017–04/2019) KEPCO Research Institute
- GPU Scheduling Performance Analysis under Queueing Delay Considerations (05/2018–10/2018) ETRI
- Improving Massive Deep Learning Training via Computation and Communication Acceleration (04/2018–10/2018) ETRI
- Parsing Techniques for Artificial Neural Network (ANN) Data Processing (09/2017–11/2017) ETRI

University of Southern California, Selected Projects

- Video Aware Wireless Networks (VAWN) Research Program

Intel Labs, Verizon Wireless, Cisco Systems

- 60 GHz Real-Time Wireless Video Broadcasting
- Annenberg Graduate Fellowship Award

Disney Research Zürich
University of Southern California

Korea University (KU), Selected Projects

- Towards Agentic AI-Enabled Edge IoT Systems for Proactive Physical World Sensing and Control (08/2025–07/2026)
PKU-KU Joint Research Grant (Collaboration with Prof. Kaigui Bian at Peking University)
- AI Teaching Assistant Research for LLM-based Large-Scale Education (10/2024–02/2025)
KU University College
- Autonomous Mobility Control using Quantum Deep Learning (03/2023–02/2024)
KU Insung Research Grant
- Mobile Access Algorithm Design using Economic Theory and AI (03/2020–02/2021)
KU Future Research Grant

Selected Publications

- **10626+ Citations** (H-index: 51+, i10-index: 230+), obtained from Google Scholar Profile (as of November 15, 2025)
- **Journals and Magazines:** 152 publications; among them, 113 IEEE/Nature/APS publications

Books

- *Fundamentals of 6G Communications and Networking*, Springer (2024) (*Editors: X. Lin, J. Zhang, Y. Liu, J. Kim*)

Selected Papers

■ Magazines

- [MM'25.10-12] Quantum Jump to Virtual Worlds: High-Quality Multiple Virtual Meta-Space Realization in Metaverse, **IEEE Multi-Media**, 32(4):ppp–ppp (S. Park, J. Kim)
- [CIM'25.08] Quantum-Eyes: Scalable Quantum Convolutional Neural Networks for Low-Overhead Object Detection, **IEEE Computational Intelligence Magazine**, 20(3):63–74 (J. Kim, E. J. Roh, C. Im, S. Park)
- [CM'24.12] The Matrix: Quantum AI for Interacting Two Worlds in Prioritized Metaverse Spaces, **IEEE Communications Magazine**, 62(12):97–103 (S. Park, H. Baek, J. Kim)
- [CM'24.10] Quantum Multi-Agent Reinforcement Learning is All You Need: Coordinated Global Access in Integrated TN/NTN Cube-Satellite Networks, **IEEE Communications Magazine**, 62(10):86–92 (S. Park, G. S. Kim, Z. Han, J. Kim)
- [CM'24.06] Quantum Multi-Agent Reinforcement Learning for Autonomous Mobility Cooperation, **IEEE Communications Magazine**, 62(6):106–112 (S. Park, J. P. Kim, C. Park, S. Jung, J. Kim)
- [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 (S. Park, H. Feng, C. Park, Y. K. Lee, S. Jung, J. Kim)
- [CSM'22.06] Recent and Future Evolution of Wi-Fi, **IEEE Communications Standards Magazine**, 6(2):8–11 (E. Au, L. Wilhelmsson, T. Baykas, J. Kim)
- [PIEEE'21.05] Communication-Efficient and Distributed Learning Over Wireless Networks: Principles and Applications, **Proceedings of the IEEE**, 109(5):796–819 (J. Park, S. Samarakoon, A. Elgabli, J. Kim, M. Bennis, S.-L. Kim, M. Debbah)
- [CM'19.03] New Challenges of Wireless Power Transfer and Secured Billing for Internet of Electric Vehicles, **IEEE Communications Magazine**, 57(3):118–124 (L. Park, S. Jeong, D. S. Lakew, J. Kim, S. Cho)
- [VTM'17.03] The Useful Impact of Carrier Aggregation: A Measurement Study in South Korea for Commercial LTE-Advanced Networks, **IEEE Vehicular Technology Magazine**, 12(1):55–62 (S. Lee, S. Hyeon, J. Kim, H. Roh, W. Lee)

■ Top Journals

- [TAES.accepted] Integrated Control, Communication, and Computing for Mission-Critical Embedded Unmanned Aerial Vehicles, **IEEE Transactions on Aerospace and Electronic Systems**, v(n):ppp–ppp (G. S. Kim, S. Park, S. Jung, D. Mohaisen, J. Kim)
- [TMC'26.01] Quantum Multi-Agent Reinforcement Learning for Cooperative Mobile Access in Space-Air-Ground Integrated Networks, **IEEE Transactions on Mobile Computing**, 25(1):ppp–ppp (G. S. Kim, Y. Cho, J. Chung, S. Park, S. Jung, Z. Han, J. Kim)
- [TON'25.08] Slimmable Federated Reinforcement Learning for Energy-Efficient Proactive Caching, **IEEE Transactions on Networking**, 33(4):2079–2094 (H. Baek, G. S. Kim, S. Park, A. F. Molisch, J. Kim)
- [TAES'25.08] Quantum Multiagent Reinforcement Learning for Joint Cube-Satellites and High-Altitude Long-Endurance Aerial Vehicles in SAGIN, **IEEE Transactions on Aerospace and Electronic Systems**, 61(4):9490–9510 (G. S. Kim, Y. Cho, S. Park, S. Jung, J. Kim)
- [TMC'25.02] Fast Quantum Convolutional Neural Networks for Low-Complexity Object Detection in Autonomous Driving Applications, **IEEE Transactions on Mobile Computing**, 24(2):1031–1042 (E. J. Roh, H. Baek, D. Kim, J. Kim)
- [TON'24.12] Spatio-Temporal Multi-Metaverse Dynamic Streaming for Hybrid Quantum-Classical Systems, **IEEE/ACM Transactions on Networking**, 32(6):5279–5294 (S. Park, H. Baek, J. Kim)
- [TMC'24.12] Joint Quantum Reinforcement Learning and Stabilized Control for Spatio-Temporal Coordination in Metaverse, **IEEE Transactions on Mobile Computing**, 23(12):12410–12427 (S. Park, J. Chung, C. Park, S. Jung, M. Choi, S. Cho, J. Kim)
- [TWC'24.03] Joint User Clustering, Beamforming, and Power Allocation for mmWave-NOMA with Imperfect SIC, **IEEE Transactions on Wireless Communications**, 23(3):2025–2038 (B. Lim, W. Yun, J. Kim, Y.-C. Ko)
- [TNNLS'24.02] Hierarchical Deep Reinforcement Learning-based Propofol Infusion Assistant Framework in Anesthesia, **IEEE Transactions on Neural Networks and Learning Systems**, 35(2):2510–2521 (W. Yun, M. Shin, D. Mohaisen, K. Lee, J. Kim)
- [TMC'24.01] Learning Location from Shared Elevation Profiles in Fitness Apps: A Privacy Perspective, **IEEE Transactions on Mobile Computing**, 23(1):581–596 (U. Meteriz, N. F. Yildiran, J. Kim, D. Mohaisen)
- [TON'23.12] SlimFL: Federated Learning with Superposition Coding over Slimmable Neural Networks, **IEEE/ACM Transactions on Networking**, 31(6):2499–2514 (W. Yun, Y. Kwak, H. Baek, S. Jung, M. Ji, M. Bennis, J. Park, J. Kim)

- [TMC'22.05] Supremo: Cloud-Assisted Low-Latency Super-Resolution in Mobile Devices, **IEEE Transactions on Mobile Computing**, 21(5):1847–1860 (J. Yi, S. Kim, J. Kim, S. Choi)
- [TMC'21.06] A Personalized Preference Learning Framework for Caching in Mobile Networks, **IEEE Transactions on Mobile Computing**, 20(6):2124–2139 (A. Malik, K. S. Kim, J. Kim, W.-Y. Shin)
- [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 (M. Choi, A. F. Molisch, D.-J. Han, D. Kim, J. Kim, J. Moon)
- [TWC'20.12] Joint Distributed Link Scheduling and Power Allocation for Content Delivery in Wireless Caching Networks, **IEEE Transactions on Wireless Communications**, 19(12):7810–7824 (M. Choi, A. F. Molisch, J. Kim) (**IEEE ComSoc MMTC Best Journal Paper Award**)
- [TWC'19.12] Markov Decision Policies for Dynamic Video Delivery in Wireless Caching Networks, **IEEE Transactions on Wireless Communications**, 18(12):5705–5718 (M. Choi, A. No, M. Ji, J. Kim)
- [TWC'19.10] Dynamic Power Allocation and User Scheduling for Power-Efficient and Delay-Constrained Multiple Access Networks, **IEEE Transactions on Wireless Communications**, 18(10):4846–4858 (M. Choi, J. Kim, J. Moon)
- [TCAD'19.09] TEI-ULP: Exploiting Body Biasing to Improve the TEI-Aware Ultra-Low Power Methods, **IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems**, 38(9):1758–1770 (W. Lee, T. Kang, J. Lee, K. Han, J. Kim, M. Pedram)
- [TMC'19.07] Seamless Dynamic Adaptive Streaming in LTE/Wi-Fi Integrated Network under Smartphone Resource Constraints, **IEEE Transactions on Mobile Computing**, 18(7):1647–1660 (J. Koo, J. Yi, J. Kim, M. A. Hoque, S. Choi)
- [JSAC'18.11] SGCO: Stabilized Green Crosshaul Orchestration for Dense IoT Offloading Services, **IEEE Journal on Selected Areas in Communications**, 36(11):2538–2548 (N.-N. Dao, D.-N. Vu, W. Na, J. Kim, S. Cho)
- [JSAC'18.06] Wireless Video Caching and Dynamic Streaming under Differentiated Quality Requirements, **IEEE Journal on Selected Areas in Communications**, 36(6):1245–1257 (M. Choi, J. Kim, J. Moon)
- [TON'16.08] Quality-Aware Streaming and Scheduling for Device-to-Device Video Delivery, **IEEE/ACM Transactions on Networking**, 24(4):2319–2331 (J. Kim, G. Caire, A. F. Molisch)

■ Top-Tier and Awarded Conferences: *Quantum Machine Learning*

- [KDD'26] (Double Blind Review, Rebuttal: 04-Apr-2025) (S. Oh, C. Im, S. Park, J. Kim)
- [CVPR'26] (Double Blind Review, Rebuttal: 22-Jan-2026) (S. Oh, C. Im, S. Park, J. Kim)
- [ICASSP'26] How Can Quantum Deep Learning Improve Large Language Models? (E. J. Roh, H. Ahn, S. Y.-C. Chen, S. Park, J. Kim)
- [ICLR'26] (Double Blind Review, Rebuttal: 11-Nov-2025) (H. K. Lee, J. Kim, S. W. Yoon)
- [CIKM'25] Quantum-Amplitude Embedded Adaptation for Parameter-Efficient Fine-Tuning in Large Language Models (E. J. Roh, J. Kim) (**Acceptance Rate: 30.63%**)
- [CIKM'25] Filtered One-Shot Training for Quantum Architecture Search (S. B. Son, S. Y.-C. Chen, J. Kim, S. Park) (**Acceptance Rate: 30.63%**)
- [IPDPS'25] AQUA: Hardware-Agnostic Qubit Allocation for Quantum Multi-Programming (X. Piao, J. Shim, J. Kim, J. Kim) (**Acceptance Rate: 24.71%**)
- [WiOpt'25] Stabilized Robust Control for Lightweight Autonomous Aircraft Mobility: A Quantum Reinforcement Learning Approach (G. S. Kim, J. Chung, T. Q. Duong, S. Park, J. Kim)
- [ICASSP'25] Quantum Reinforcement Learning for Coordinated Satellite Systems (G. S. Kim, S. Chen, S. Park, J. Kim)
- [CIKM'24] Hands-On Introduction to Quantum Machine Learning (S. Y.-C. Chen, J. Kim), **ACM CIKM Tutorial (2024)**
- [CIKM'23] Quantum Split Learning for Privacy-Preserving Information Management (S. Park, H. Baek, J. Kim) (**Acceptance Rate: 27.44%**)
- [CIKM'23] Logarithmic Dimension Reduction for Quantum Neural Networks (H. Baek, S. Park, J. Kim) (**Acceptance Rate: 27.44%**)
- [AAAI'23] Quantum Multi-Agent Meta Reinforcement Learning (W. Yun, J. Park, J. Kim) (**Acceptance Rate: 19.61%**)
- [AAAI'23] FV-Train: Quantum Convolutional Neural Network Training with a Finite Number of Qubits by Extracting Diverse Features (H. Baek, W. J. Yun, J. Kim), **AAAI Student Abstract and Poster (2023)** (**Finalist (Top 25), Oral Presentation Contest**)
- [ICML'22] Slimmable Quantum Federated Learning (W. J. Yun, J. P. Kim, S. Jung, J. Park, M. Bennis, J. Kim), **ICML Workshop on Dynamic Neural Networks (2022)** (**Spotlight, Oral Presentation**)

■ Top-Tier and Awarded Conferences: *AI/ML Algorithms*

- [AAAI'26] Multimodal Coarse-to-Local Transformer for End-to-End Autonomous Driving (Y. Cho, J. Kim), **AAAI Student Abstract and Poster (2026)** (**Finalist (Top 35), Oral Presentation**) (**Acceptance Rate: 10.61%**)
- [CIKM'25] LLM-based Interactive Coding Education via Predictive Query Management and Student-Centered Fine-Tuning: Design and Implementation with 1500-Student Class Data (G. Youn, J. Lee, J. Kim, C. Yoo) (**Acceptance Rate: 30.63%**)
- [CIKM'22] Hierarchical Reinforcement Learning using Gaussian Random Trajectory Generation in Autonomous Furniture Assembly (W. Yun, D. Mohaisen, S. Jung, J.-K. Kim, J. Kim) (**Acceptance Rate: 29.64%**)
- [IJCAI'19] Randomized Adversarial Imitation Learning for Autonomous Driving (M. Shin, J. Kim) (**Acceptance Rate: 17.89%**)

■ Top-Tier and Awarded Conferences: *Communications, Networks, and Systems*

- [NOMS'25] Joint Multi-Agent Reinforcement Learning and Message-Passing for Distributed Multi-UAV Network Management using Conflict Graphs (Y. Cho, H. Lee, S. Park, J. Kim)
- [WiOpt'24] Advanced Taxiing Path Guidance using Multi-Agent Reinforcement Learning for Air Traffic Management (S. Lee, G. S. Kim, S. Park, J. Kim)
- [WiOpt'22] Cooperative Video Quality Adaptation for Delay-Sensitive Dynamic Streaming using Adaptive Super-Resolution (M. Choi, W. Yun, J. Kim)
- [ICTC'22] Reinforcement Learning Empowered Massive IoT Access in LEO-based Non-Terrestrial Networks (J.-H. Lee, D. P. Selvam, A. F. Molisch, J. Kim) (**Best Paper Award**)

- [INFOCOM'22] Joint Superposition Coding and Training for Federated Learning over Multi-Width Neural Networks (*H. Baek, W. Yun, Y. Kwak, S. Jung, M. Ji, M. Bennis, J. Park, J. Kim*) (*Acceptance Rate: 19.93%*)
- [ICOIN'21] Infrastructure-Assisted Cooperative Multi-UAV Deep Reinforcement Energy Trading Learning for Big-Data Processing (***Best Paper Award***)
- [ICDCS'20] Understanding the Potential Risks of Sharing Elevation Information on Fitness Applications (*Ü. Meteriz, N. F. Yildiran, J. Kim, D. Mohaisen*) (*Acceptance Rate: 17.98%*)
- [ICDCS'18] ShmCaffe: A Distributed Deep Learning Platform with Shared Memory Buffer for HPC Architecture (*S. Ahn, J. Kim, E. Lim, W. Choi, A. Mohaisen, S. Kang*) (*Acceptance Rate: 20.63%*)
- [ACM-MM'17] REQUEST: Seamless Dynamic Adaptive Streaming over HTTP for Multi-Homed Smartphone under Resource Constraints (*J. Koo, J. Yi, J. Kim, M. A. Hoque, S. Choi*) (*Acceptance Rate: 27.63%*)
- [MobiSys'10] Energy-Efficient Rate-Adaptive GPS-based Positioning for Smartphones (*J. Paek, J. Kim, R. Govindan*) (*Acceptance Rate: 19.84%*)

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- [TVT.accepted] Large-Scale Battery-Conscious Collision-Free Path-Finding for Sustainable and Autonomous Multi-AGV Mobility Control, *IEEE Transactions on Vehicular Technology*, v(n):ppp–ppp (*Y. Cho, S. Ahn, S. Park, J. Kim*)
- [TIV'25.11] Adaptive Quantum Federated Learning for Autonomous Surveillance Multi-Drone Networks, *IEEE Transactions on Intelligent Vehicles*, 10(11):ppp–ppp (*S. Park, C. Park, S. Jung, J. Kim*)
- [JS'25.10] Joint Scalable Quantum Convolutional Neural Network and Reverse-Fidelity Training for High-Accurate Recognition in Unmanned Aerial Vehicle Surveillance, *The Journal of Supercomputing*, 81(n):1495 (*E. J. Roh, J. Kim, S. Jung, S. Park*)
- [TASE'25.09] Adaptive Excavation Automation in Complex Soil Environments using Reinforcement Learning, *IEEE Transactions on Automation Science and Engineering*, 22:21181–21194 (*M. Shin, J. Cho, J. Kim, S. Jung*)
- [ESWA'25.09] Correlation-Assisted Spatio-Temporal Reinforcement Learning for Stock Revenue Maximization, *Expert Systems with Applications*, 289:128361 (*J. Chung, M. Kim, S. Min, H. Choi, S. Park, J. Kim*)
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- [IOTJ'25.08] Carbon-Aware Edge Computing for Internet of Everything Networks: A Digital Twin Approach, *IEEE Internet of Things Journal*, 12(15):29240–29251 (*D. V. Huynh, S. R. Khosravirad, V. Sharma, J. Kim, B. Canberk, T. Q. Duong*)
- [JCN'25.08] Stabilized Classification Control using Multi-Stage Quantum Convolutional Neural Networks for Autonomous Driving, *Journal of Communications and Networks*, 27(4):264–272 (*E. J. Roh, S. Park, S. Jung, J. Kim*)
- [JCN'25.08] Special Issue on Quantum Technologies for Communication Systems, *Journal of Communications and Networks*, 27(4):217–221 (*S. Y. Shin, Z. Han, S. Ali, S. Y.-C. Chen, Y. Liu, S. Park, J. Kim*)
- [IOTJ'25.07] Quantum Reinforcement Learning for Lightweight LEO Satellite Routing, *IEEE Internet of Things Journal*, 12(14):28986–29004 (*G. S. Kim, S. Lee, I.-S. Cho, S. Park, J. Kim*)
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- [NN'25.07] Quantum Federated Learning with Pole-Angle Quantum Local Training and Trainable Measurement, *Neural Networks*, 187:107301 (*S. Park, H. Lee, S. B. Son, S. Jung, J. Kim*)
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- [IOTJ'25.06] Entanglement-Controlled Quantum Federated Learning, *IEEE Internet of Things Journal*, 12(11):18318–18330 (*S. Park, H. Lee, S. Jung, J. Park, M. Bennis, J. Kim*)
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Academic Activities and Research Supervision

Research Supervision

■ Ph.D. Alumni

- Dr. Soohyun Park (03/2019–08/2023 (MS-PhD), 09/2023–02/2024 (Postdoc)), *Sookmyung Women's University* (Professor)
- Dr. Hankyul Baek (03/2021–02/2024 (MS-PhD), 03/2024–03/2025 (Postdoc)), *ETRI AI Safety Institute* (Researcher)
- Dr. Gyu Seon Kim (03/2023–02/2026 (MS-PhD)), *Korea University* (Postdoctoral Scholar)

■ M.S. Alumni

- **Kyeongseon Kim** (09/2017–08/2019), POSTECH (Ph.D. Student in Electrical Engineering)
- **Dohyun Kwon** (03/2018–02/2020), Hyundai Motors Group
- **Dohyun Kim** (03/2018–02/2020), Naver Webtoon
- **MyungJae Shin** (03/2018–02/2020), Naver
- **Jaeho Choi** (03/2019–02/2021), Korea Meteorological Administration [Military Service Exception]
- **Yoo Jeong (Anna) Ha** (03/2021–02/2023), The University of Chicago (Ph.D. Student in Computer Science)
- **Jaehyun Chung** (09/2023–08/2025), Korea University (Ph.D. Student in Electrical and Computer Engineering)
- **Yeryeong Cho** (03/2024–02/2026), Korea University Net-Zero CAFE Research Center
- **Chaemoon Im** (03/2024–02/2026), Korea University Net-Zero CAFE Research Center

■ Postdoctoral Scholars

- **Dr. Minseok Choi** (09/2018–02/2019, jointly with Prof. Andreas F. Molisch (USC)), **Kyung Hee University (Professor)**
- **Dr. Soyi Jung** (03/2021–08/2021, jointly with Prof. Marco Levorato (UC-Irvine)), **Ajou University (Professor)**
- **Dr. Ju-Hyung Lee** (03/2022–02/2023, jointly with Prof. Andreas F. Molisch (USC)), Nokia USA (Principal Engineer)

IEEE Activities (Membership, Editorial Boards, and Services)

- Senior Member (2018–), Member (2006–2017)
- Associate Editor (2025–), **IEEE Communications Surveys and Tutorials**
- Editor (2023–), **IEEE Internet of Things Journal**
- Associate Editor (2020–), **IEEE Transactions on Vehicular Technology**
- Guest Editor, **Journal of Communications and Networks** (S.I. on Quantum Technologies for Communication Systems)
- Guest Editor, **IEEE Communications Standards Magazine** (S.I. on Recent and Future Evolution of Wi-Fi)

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