

Joongheon Kim

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Associate Professor, Korea University – School of Electrical Engineering, Seoul, 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**
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Professional Affiliations

Full-Time

- **Korea University**, Seoul, Republic of Korea
 - Professor** (03/2026–), School of Electrical Engineering (Graduate: Department of Electrical and Computer Engineering)
 - Associate Professor** (03/2021–02/2026), School of Electrical Engineering
 - Assistant Professor** (09/2019–02/2021), School of Electrical 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)
 - Affiliated Professor** (03/2025–), Department of Defense Convergence Technology (LIG Nex1, Graduate School)
- **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

Visiting for Quantum Research Collaboration

- **Seoul National University Hospital**, Seoul, Republic of Korea
 - Visiting Professor** (10/2025–09/2026), Healthcare AI Research Institute (Host: Prof. Hyung-Chul Lee)
 - Quantum Reinforcement Learning for Multi-Drug Infusion Control in Anesthesia
 - Quantum Retrieval-Augmented Generation (RAG) for Medical Diagnostic Large Vision-Language Models
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University and Government R&D/Administrative Positions

R&D Leaderships at Universities

- **Korea University**, Seoul, Republic of Korea
 - Director** (07/2024–12/2031), Net-Zero CAFE Research Center (University IT Research Center (ITRC) Program)
 - Principal Investigator** (07/2024–12/2031), Software Star-Lab (Quantum AI Empowered Second-Life Platform Technology)

Administrative Positions at Universities

- **Korea University**, Seoul, Republic of Korea
 - Member** (03/2021–02/2027), Korea University 120th Anniversary Planning Committee
 - 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)
 - Member** (06/2021–03/2022), 09/2022–08/2023), Academic Affair Planning Committee
 - Member** (03/2021–08/2023), Distance Learning Management Committee
 - Steering Committee Member** (07/2020–06/2022), Institute of Data Science (IDS)

- **National AI Strategy Committee** (Direct Presidential Control), **Advisory Committee (12/2025–Present)**
- **National Research Foundation of Korea, Review Board (11/2024–10/2026)**

Awards and Honors

Research and Academic Excellence (International)

- **Finalist, AAAI Student Abstract and Poster Session – Oral Presentation** 2026 (Top 35), 2023 (Top 25)
- **IEEE ICTC Best Paper Award – IEEE Communications Society** 2022
- **Spotlight, Oral Presentation – ICML Workshop on Dynamic Neural Networks (2022)** 2022
- **IEEE MMTC Best Journal Paper Award – IEEE Communications Society** 2021
- **IEEE ICOIN Best Paper Award – IEEE Computer Society** 2021
- **IEEE MMTC Outstanding Young Researcher Award – IEEE Communications Society** 2020
- **IEEE Systems Journal Best Paper Award – IEEE Systems Council** 2020
- **Next Generation and Standards (NGS) Division Recognition Award – Intel Corporation** Q1/2015
- **Annenberg Graduate Fellowship Award – University of Southern California** 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** Gold (2019), Silver (2025), Bronze (2025, 2024, 2024, 2023, 2020)
- **IEEE VTS Seoul Chapter Award – IEEE Vehicular Technology Society** 2023, 2022, 2022, 2021, 2021, 2019

Research and Academic Excellence (Korea Regional, since 2016)

- **HFR Paper Award (Area: Quantum Technologies and Quantum Communications) – KICS** 2025
- **Best Paper Award, The Journal of KICS – KICS** 2024
- **HFR Paper Award (Area: Quantum Technologies and Quantum Communications) – KICS** 2023
- **Haedong Young Scholar Award – KICS and Haedong Foundation** 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%) – Korea University** 2024
- **Best Research Achievement Award – Korea University, School of Electrical Engineering** 2024
- **Insung Research Grant Award – Korea University** 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**
 - Probability and Random Process KECE209-02 (2025)
 - Software Programming Basics GECT002-01 (2024), GECT002-06 (2025)
 - Computer Language and Laboratory EGRN151-07 (2019), EGRN151-06 (2021)
 - Introduction to Computers SEMI103 (2021)
 - Future Mobility Technology GEQR075 (2022)
- **Best Teaching Award (Top 20%), Totally, 7 times**
 - Probability and Random Process KECE209-02 (2021), KECE209-02 (2022)
 - Software Programming Basics GECT002-02 (2024), GECT002-08 (2024), GECT002-09 (2025)
 - Computer Language and Laboratory EGRN151-09 (2020)
 - Object-Oriented Programming SEMI104 (2021)

Academic and University Services (International)

- **Certificate of Appreciation – IEEE Future Networks, AI/ML Working Group** 08/2025
- **Certificate of Appreciation – IEEE/IFIP WiOpt (2024)** 10/2024
- **Best Editor Award – ICT Express (Elsevier)** 07/2023
- **2022 Best Chapter Award, IEEE Vehicular Technology Society Chapter, Awarded as a Treasure** 2022
- **Appreciation Recognition – Daegu Gyeongbuk Institute of Science and Technology (DGIST)** 2021
- **Certificate of Appreciation – Department of Computer Science, University of Southern California** 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 (Title: Quantum Machine Learning and Software Technologies)** 2025
- **Best Research Group Award, KICS Research Group in Quantum Communications and Quantum Computing (Group Leader)** 2025
- **Appreciation Recognition – Daegu Gyeongbuk Institute of Science and Technology (DGIST)** 2021

Student Awards (International)

- **IEEE TCSC Award for Excellence in Scalable Computing (IEEE Computer Society), Awarded to Soohyun Park** 2025
- **Young Scientist Award (ICSANE 2025), Awarded to Minji Lee** 2025
- **IEEE Vehicular Technology Society Student Scholarship Award (2025), Awarded to Gyu Seon Kim** 2025
- **IEEE ICDCS Best Runner-Up Poster Paper Award (2025), Awarded to Seok Bin Son, Soohyun Park** 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

- 10875+ Citations (H-index: 51+, i10-index: 233+), obtained from Google Scholar Profile (as of January 5, 2026)
- Journals and Magazines: 159 publications; among them, 116 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 MultiMedia*, 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-Tier Journals

- [PRA.accepted] Understanding Qubit Trajectories in Parameterized Quantum Circuits, *Physical Review A*, 113(n):pppppp (S. Oh, C. Im, S. Park, J. Kim)
- [TAES.accepted] Quantum Reinforcement Learning for Joint Control, Communication, and Computing in Stabilized Reusable Space Rocket, *IEEE Transactions on Aerospace and Electronic Systems*, 62:ppp–ppp (G. S. Kim, J. Chung, S. Jung, S. Park, J. Kim)
- [TAES.accepted] Integrated Control, Communication, and Computing for Mission-Critical Embedded Unmanned Aerial Vehicles, *IEEE Transactions on Aerospace and Electronic Systems*, 62: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):1200–1218 (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)
- [TNSM'25.04] Intelligent Extra Resource Allocation for Cooperative Awareness Message Broadcasting in Cellular-V2X Networks, *IEEE Transactions on Network and Service Management*, 22(2):1677–1689 (S. Jung, J.-H. Kim, 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)
- [TNSM'24.08] Cooperative Multi-UAV Positioning for Aerial Internet Service Management: A Multi-Agent Deep Reinforcement Learning Approach, *IEEE Transactions on Network and Service Management*, 21(4):3797–3812 (J. Kim, S. Park, S. Jung, C. Cordeiro)

- [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)
- [TGCN'24.03] Joint Delay-Sensitive and Power-Efficient Quality Control of Dynamic Video Streaming using Adaptive Super-Resolution, *IEEE Transactions on Green Communications and Networking*, 8(1):103–117 (M. Choi, W. Yun, S. Son, S. Park, J. Kim)
- [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 Conferences: AI (especially, Quantum Machine Learning) and Networks**

- [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%*)
- [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%*)
- [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)
- [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)
- [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)**
- [WiOpt'24] Advanced Taxiing Path Guidance using Multi-Agent Reinforcement Learning for Air Traffic Management (S. Lee, G. S. Kim, S. Park, J. Kim)
- [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%*)
- [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%*)
- [WiOpt'22] Cooperative Video Quality Adaptation for Delay-Sensitive Dynamic Streaming using Adaptive Super-Resolution (M. Choi, W. Yun, J. Kim)
- [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%*)
- [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%*)
- [IJCAI'19] Randomized Adversarial Imitation Learning for Autonomous Driving (M. Shin, J. Kim) (*Acceptance Rate: 17.89%*)
- [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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- [AC'26.02] Collaborative Learning Architecture for Autonomous Excavator Planning and Execution, *Automation in Construction*, 182:106742 (J. Cho, M. Shin, J. Kim, S. Jung)
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- [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(16):1495 (E. J. Roh, J. Kim, S. Jung, S. Park)
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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)
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Academic Activities and Research Supervision

Research Supervision

■ Ph.D. Alumni

- Dr. Soohyun Park (03/2019–08/2023 (PhD), 09/2023–02/2024 (Postdoc)), Sookmyung Women's University (Professor)
- Dr. Hankyul Baek (03/2021–02/2024 (PhD), 03/2024–03/2025 (Postdoc)), ETRI AI Safety Institute (Researcher)
- Dr. Hyunsoo Lee (03/2021–02/2026 (PhD)), Korea University (Postdoctoral Scholar)
- Dr. Gyu Seon Kim (03/2023–02/2026 (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 (Researcher)
- Dohyun Kim (03/2018–02/2020), Naver Webtoon (Researcher)
- MyungJae Shin (03/2018–02/2020), Naver (Researcher)

- **Jaeho Choi** (03/2019–02/2021), Korea Meteorological Administration (Researcher, 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)
- **Chaemoon Im** (03/2024–02/2026), Korea University Net-Zero CAFE Research Center (Researcher)
- **Yeryeong Cho** (03/2024–02/2026), Korea University Net-Zero CAFE Research Center (Researcher)

■ 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 (Researcher)**

IEEE Activities (Membership, Editorial Boards, and Services)

- *Senior Member* (2018–), *Member* (2006–2017)
- *Associate Editor* (2025–), **ACM Computing Surveys**
- *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)
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