Joongheon Kim

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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
  – **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)
  – **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
- **Korea University**, Seoul, Republic of Korea
  – **M.S. Student in Computer Science and Engineering (03/2004–02/2006)**, Department of Computer Science and Engineering
  – **Research Assistant (03/2004–02/2006)**, Network Research Lab

Professional Affiliations – Visiting for 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)
  Quantum Reinforcement Learning for Propofol Infusion Control in Anethesia

University and Government R&D/Administrative Positions

■ R&D Leadership at Universities

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

■ Administrative Services at Universities

- **Korea University**, Seoul, Republic of Korea
  – **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)

■ Services for Government/National R&D

- **National AI Strategy Committee**, **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* — **Disney Research Zürich**
- *Annenberg Graduate Fellowship Award* — **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

- **10852+ Citations** (H-index: 51+, i10-index: 231+), obtained from Google Scholar Profile (as of December 25, 2025)
- **Journals and Magazines: 155** publications; among them, **115** 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*

[TAES.*accepted*] Quantum Reinforcement Learning for Joint Control, Communication, and Computing in Stabilized Reusable Space Rocket, *IEEE Transactions on Aerospace and Electronic Systems*, v(n):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*, 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):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***

[ICASSP'26] How Can Quantum Deep Learning Improve Large Language Models? *(E. J. Roh, H. Ahn, S. Y.-C. Chen, S. Park, J. Kim)*

[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%)*

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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)
- *Guest Editor*, **IEEE Communications Standards Magazine** (S.I. on Recent and Future Evolution of Wi-Fi)

References

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