Joongheon Kim

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Associate Professor, Korea University – School of Electrical Engineering, Seoul, Republic of Korea
– *Director*, Net-Zero CAFE (Connectivity and Autonomy for Future Ecosystem) Research Center (ITRC)
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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
  – **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)
- **Seoul National University Hospital**, Seoul, Republic of Korea
  – **Visiting Professor (10/2025–09/2026)**, Healthcare AI Research Institute
- **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

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)

- **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
- **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** – *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** 2024 (Bronze), 2024 (Bronze), 2023 (Bronze), 2020 (Bronze), 2019 (Gold)
- **IEEE VTS Seoul Chapter Award** – *IEEE Vehicular Technology Society* 2022, 2023, 2022, 2021, 2021, 2019

Research and Academic Excellence (Korea Regional)

- **Best Paper Award, The Journal of KICS** – *KICS* 11/2024
- **HFR Paper Award (Area: Quantum Technologies and Quantum Communications)** – *KICS* 11/2023
- **Korea Electronics Technology Institute (KETI) President Award** – *KICS* 06/2023
- **Haedong Paper Award** – *KICS* 02/2023, 06/2021
- **Haedong Young Scholar Award** – *KICS* and *Haedong Foundation* 12/2018
  For recognizing a researcher under the age of 40 who has made outstanding contributions to IT R&D
- **Outstanding Paper Award** – *LG Electronics CTO Office, Multimedia Research Laboratory* 01/2008
- **RFID Expert Group President Award** – *The 3rd RFID/USN Research Paper Contest* 10/2007
- **ETRI President Award** – *The 2nd RFID/USN Research Paper Contest* 11/2006
- **Korea Association of RFID/USN (KARUS) President Award** – *The 1st RFID/USN Research Paper Contest* 10/2005
- **Scholarships for Academic Excellence** – *Korea University (Computer Science and Engineering)* Fall 2000, Fall 1999

Korea University

- **Granite Tower Best Research Award (Top 3%)** – *Korea University* 06/2025
  For recognizing top 3% research achievement among Korea University faculty members in 2024
- **Best Research Achievement Award** –*Korea University, School of Electrical Engineering* 03/2025
- **Insung Research Grant Award (Top 5%)** – *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%)** Spring 2024, Spring 2022, Fall 2021, Spring 2021, Fall 2019
- **Best Teaching Award (Top 20%)** Spring 2024, Spring 2024, Spring 2022, Fall 2021, Spring 2021, Fall 2020

Academic and University Services

- **Outstanding Contribution Award** – *KICS* 2024, 2021, 2019
- **Outstanding Contribution Award** – *KIISE Information Network Society* 2023, 2022
- **2022 Best Chapter Award, IEEE Vehicular Technology Society Chapter**, Awarded as a Treasure 2022
- **Outstanding Contribution Award** – *Open Standards and ICT Association (OSIA)* 2021
- **Appreciation Recognition** – *Daegu Gyeongbuk Institute of Science and Technology (DGIST)* 2021
- **Fellow Employee Recognition [#3081146]** – *Intel Corporation* 2014
- **Certificate of Appreciation** – *Department of Computer Science, University of Southern California* 2010

R&D Projects

University-Wide/Center Projects

- *Net-Zero CAFE Research Center* (07/2024–12/2031) **ITRC (Korea Univ) (Center Director)**
- *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) **IITP (Software Star-Lab)**
- *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

- **10126+ Citations** (H-index: 49+, i10-index: 216+), obtained from Google Scholar Profile (as of August 17, 2025)

Books

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

Selected Papers

■ ***Top-Tier Conferences: AI Algorithms and Systems (especially, Quantum Machine Learning)***

[CIKM'25] Quantum-Amplitude Embedded Adaptation for Parameter-Efficient Fine-Tuning in Large Language Models, *(E. J. Roh, J. Kim)*

[CIKM'25] Filtered One-Shot Training for Quantum Architecture Search, *(S. B. Son, S. Y.-C. Chen, J. Kim, S. Park)*

[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)*

[IPDPS'25] AQUA: Hardware-Agnostic Qubit Allocation for Quantum Multi-Programming, *(X. Piao, J. Shim, J. Kim, J. Kim)*

[CIKM'24] Hands-On Introduction to Quantum Machine Learning, *(S. Y.-C. Chen, J. Kim)*

[CIKM'23] Quantum Split Learning for Privacy-Preserving Information Management, *(S. Park, H. Baek, J. Kim)*

[CIKM'23] Logarithmic Dimension Reduction for Quantum Neural Networks, *(H. Baek, S. Park, J. Kim)*

[AAAI'23] Quantum Multi-Agent Meta Reinforcement Learning, *(W. Yun, J. Park, J. Kim)*

[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)*

[IJCAI'19] Randomized Adversarial Imitation Learning for Autonomous Driving, *(M. Shin, J. Kim)*

■ ***Top-Tier Conferences: Communications, Networks, and Mobility Control***

[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)*

[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)*

[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)*

[ICDCS'20] Understanding the Potential Risks of Sharing Elevation Information on Fitness Applications, *(Ü. Meteriz, N. F. Yildiran, J. Kim, D. Mohaisen)*

[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)*

[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)*

[MobiSys'10] Energy-Efficient Rate-Adaptive GPS-based Positioning for Smartphones, *(J. Paek, J. Kim, R. Govindan)*

■ ***Journals and Magazines*** **(totally, 149 publications; among them, 110 IEEE publications)**

[TMC.*accepted*] Quantum Multi-Agent Reinforcement Learning for Cooperative Mobile Access in Space-Air-Ground Integrated Networks, *IEEE Transactions on Mobile Computing*, v(n):ppp–ppp *(G. S. Kim, Y. Cho, J. Chung, S. Park, S. Jung, Z. Han, J. Kim)*

[TASE.*accepted*] (Double Blind Review), *IEEE Transactions on Automation Science and Engineering*, (Conditionally Accepted) *(M. Shin, J. Cho, J. Kim, S. Jung)*

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

[TON'25.10] Slimmable Federated Reinforcement Learning for Energy-Efficient Proactive Caching, *IEEE Transactions on Networking*, 33(5):ppp–ppp *(H. Baek, G. S. Kim, S. Park, A. F. Molisch, J. Kim)*

[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)*

[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)*

[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)*

[IOTJ'25.08] Joint Interference Approximation and Guard-Band Management for Spectrum-Efficient Integrated NTN-TN Networks, *IEEE Internet of Things Journal*, 12(15):32220–32236 *(J. Jang. J. Kim, J. Kim, S. Jung)*

[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):ppp–ppp *(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):ppp–ppp *(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)*

[IOTJ'25.07] Privacy-Preserving Uncertainty Calibration using Perceptual Encryption in Cloud-Edge Collaborative Artificial Intelligence of Things, *IEEE Internet of Things Journal*, 12(13):25424–25441 *(I. Ahmad, J. Kim, S. Shin)*

[IOTJ'25.07] Joint Quantum Reinforcement Learning and Neural Myerson Auction for High-Quality Digital-Twin Services in Multitier Networks, *IEEE Internet of Things Journal*, 12(13):23722–23735 *(S. Park, G. S. Kim, J. Kim)*

[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)*

[JS'25.07] Quantum Infidelity Codistillation for Fast and Accurate Distributed Quantum Machine Learning, *The Journal of Supercomputing*, 81(10):1151 *(S. Oh, J. Kim, J. Park, H. Baek, H. Lee, J. Kim, S.-L. Kim)*

[MM'25.04-06] Quantum Jump to Virtual Worlds: High-Quality Multiple Virtual Meta-Space Realization in Metaverse, *IEEE MultiMedia*, 32(2):ppp–ppp *(S. Park, J. Kim)*

[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)*

[JS'25.06] SQUAD: Software Testing for Quantum Distributed Learning Software, *The Journal of Supercomputing*, 81(9):1071 *(S. Park, J. H. Cho, H. J. Yook, G. S. Jhun, Y. K. Lee, J. Kim, S. Park)*

[TVT'25.05] Dynamic Quantum Federated Learning for UAV-based Autonomous Surveillance, *IEEE Transactions on Vehicular Technology*, 74(5):8158-8170 *(S. Park, S. B. Son, 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)*

[JS'25.02] Hybrid Quantum-Classical 3D Object Detection using Multi-Channel Quantum Convolutional Neural Network, *The Journal of Supercomputing*, 81(3):455 *(E. J. Roh, J. Y. Shim, J. Kim, S. Park)*

[EL'25.01] Fast Batch Gradient Descent in Quantum Neural Networks, *IET Electronics Letters*, 61(1):e70162 *(J. Y. Shim, J. Kim)*

[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)*

[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)*

[IOTJ'24.12] Markov Decision Policies for Distributed Angular Routing in LEO Mobile Satellite Constellation Networks, *IEEE Internet of Things Journal*, 11(23):38744–38754 *(S. Park, G. S. Kim, S. Jung, J. Kim)*

[TIV'24.11] Neural Myerson Auction for Truthful and Distributed Mobile Charging in UAV-Assisted Digital-Twin Networks, *IEEE Transactions on Intelligent Vehicles*, 9(11):ppp–ppp *(S. Jung, 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)*

[Access'24.10] Sensing-to-Sky Intermittent Connectivity Realization for LTE-Enabled Drone Platforms: Embedded Design, Measurement Study, and Positioning Applications, *IEEE Access*, 12:137360–137372 *(J. Kim, S. Park, U. Jo, T. Kim, S. Jung, J. Kim)*

[FGCS'24.10] AQUA: Analytics-driven Quantum Neural Network (QNN) User Assistance for Software Validation, *Future Generation Computer Systems*, 159:545-556 *(S. Park, H. Baek, J. W. Yoon, Y. K. Lee, J. Kim)*

[ETRI'24.10] Trends in Quantum Reinforcement Learning: State-of-the-Arts and the Road Ahead, *ETRI Journal*, 46(5):748-758 *(S. Park, 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)*

[Access'24.08] Enhancing Cost-Effective 5G Virtualized RAN Pooling Gain on Clouds: An Intelligent Auto-Scaling Approach, *IEEE Access*, 12:111322–111333 *(K. Cho, J. Kim, S. Jung)*

[TVT'24.07] Age-of-Information Aware Caching and Delivery for Infrastructure-Assisted Connected Vehicles, *IEEE Transactions on Vehicular Technology*, 73(7):10681–10696 *(S. Park, C. Park, S. Jung, M. Choi, J. Kim)*

[MTAP'24.07] Stabilized Performance Maximization for GAN-based Real-Time Authentication Image Generation over Internet, *Multimedia Tools and Applications*, 83(22):62045-62059 *(J. Y. Shim, S. Jung, J. Kim, J.-K. 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)*

[TVT'24.04] Learning-Based Cooperative Mobility Control for Autonomous Drone-Delivery, *IEEE Transactions on Vehicular Technology*, 73(4):4870–4885 *(S. Park, C. Park, J. Kim)*

[Access'24.04] Dynamic Quantum Federated Learning for Satellite-Ground Integrated Systems using Slimmable Quantum Neural Networks, *IEEE Access*, 12:58239–58247 *(S. Park, S. Jung, J. Kim)*

[Access'24.04] Quantum Reinforcement Learning for Spatio-Temporal Prioritization in Metaverse, *IEEE Access*, 12:54732–54744 *(S. Park, H. Baek, 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)*

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Academic Activities and Research Supervision

Research Supervision

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- *Editor (2023–)*, **IEEE Internet of Things Journal**
- *Associate Editor (2020–)*, **IEEE Transactions on Vehicular Technology**
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