# Joongheon Kim

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**Associate Professor**, Korea University – School of Electrical Engineering, Seoul, Republic of Korea
- E-mail: joongheon@korea.ac.kr • WWW: https://joongheon.github.io

## Highlights

### Research Milestones

- **107 Journals** (among them, **80 IEEE Journals**), https://sites.google.com/view/aimlab-kuee/publications/journals – **87** Published/Accepted (among them, **69 IEEE**), **7** Under-Revision, and **13** Under-Review Journals
- **12 Top Conferences**, *i.e.*, INFOCOM (2023, review), ICSE (2023, review), AAAI (2023), CIKM (2022), WiOpt (2022), ICDCS (2022), INFOCOM (2022), ICDCS (2020), IJCAI (2019), ICDCS (2018), MM (2017), MobiSys (2010, *Citation: 600+*)
- **5505+ Citations** (H-index: 35+, i10-index 134+), obtained from Google Scholar Profile (as of November 26, 2022)
- **IEEE MMTC Best Journal Paper Award (2021)**, *IEEE Communications Society*
- **IEEE MMTC Outstanding Young Researcher Award (2020)**, *IEEE Communications Society*
- **IEEE Systems Journal Best Paper Award (2020)**, Top 7 among 793 accepted papers in 2019 (0.88%)
- **7 Awards from IEEE Conferences and Contests**, i.e., *IEEE ICTC Best Paper Award (2022)*, *IEEE ICOIN Best Paper Award (2021)*, *IEEE Seoul Section Student Paper Contest Awards (1 in 2020; 1 in 2019)*, and *IEEE VTS Seoul Chapter Awards (2 in 2021; 1 in 2019)*
- **6 Tutorials at IEEE Conferences**, i.e., *ICUFN (2022)*, *ICOIN (2022)*, *ICUFN (2021)*, *ICAIIC (2021)*, *ICOIN (2019)*, and *ICC (2018)*
- **65+ Patents** are granted, and among them, **46 Granted Patents** are successfully adopted by 60 GHz Millimeter-Wave IEEE 802.11 Standards, i.e., IEEE 802.11ad and IEEE 802.11ay
- **Research Funds (since March 2016):** 6,280,384 USD ≈ 6,280,384,000 KRW (except University Internal Funds)

### Research Supervision and Teaching (As a faculty member since March 2016)

- **2 Tenure-Track Professors (formerly supervised by Prof. Joongheon Kim (Postdoctoral, Ph.D., M.S., Interns))**, i.e., Minseok Choi *(Kyung Hee University, Korea)*, Soyi Jung *(Ajou University, Korea)*
- **8 Best Teaching Awards at Korea University**, i.e., 4 awards are for top 5% ***(Granite Tower Best Teaching Award)*** and 4 awards are for top 20% ***(Best Teaching Award)***

### IEEE Society Academic Activities

- **Senior Member of the IEEE (2018–)** and IEEE Membership (2005–) for 18+ years
- **Distinguished Lecturer, IEEE Communications Society (ComSoc)** (class of 2022–2023) IEEE ComSoc
- **Distinguished Lecturer, IEEE Systems Council** (class of 2022–2024) IEEE Systems Council
- **Editor (2022–)**, *IEEE Transactions on Machine Learning in Communications and Networking* IEEE ComSoc
- **Associate Editor (2020–)**, *IEEE Transactions on Vehicular Technology* IEEE VTS
- **Guest Editor (06/2022)**, *IEEE Communications Standards Magazine* (S.I. on Recent and Future Evolution of Wi-Fi) IEEE ComSoc
- **IEEE Vehicular Technology Society (VTS)**, Seoul Chapter Treasurer for 3 years (2020–2023) IEEE VTS
- **99+ Technical Program Committee (TPC)** and **26+ Organizing Committee (OC)** Contributions for IEEE Conferences

## Educational Backgrounds

- **University of Southern California (USC) – Viterbi School of Engineering**, Los Angeles, California, USA
  – Ph.D. (08/2009–08/2014) in Computer Science (Advisor: *Prof. Andreas F. Molisch*, Fellow of the IEEE)
  – M.S. (05/2014) in Computer Science with specialization in High Performance Computing and Simulations
  – M.S. (05/2012) in Electrical Engineering
- **Korea University**, Seoul, Republic of Korea
  – M.S. (03/2004–02/2006) in Computer Science and Engineering
  – B.S. (03/1999–02/2004) in Computer Science and Engineering

## R&D Positions

### Full-Time Positions

- **Korea University – College of Engineering**, Seoul, Republic of Korea
  – *Associate Professor (03/2021–Present)*, *Assistant Professor (09/2019–02/2021)*, School of Electrical Engineering
  – *Adjunct Professor (03/2023–Present)*, Department of Communications Engineering (with **Samsung Electronics**)
  – *Adjunct Professor (11/2022–Present)*, Department of Future Science and Technology Business (Graduate School)
  – *Adjunct Professor (09/2022–Present)*, Department of Smart Convergence (Graduate School, with **LG Electronics**)
  – *Adjunct Professor (03/2021–02/2023)*, Department of Semiconductor Engineering (with **SK Hynix**)
  – R&D Positions
    * *Vice Director (10/2020–Present)*, **Artificial Intelligence Engineering Research Center (KU-AIER)**
  – Administrative Positions
    * *Dean (06/2021–Present)*, **Center for Teaching and Learning (CTL)**
    * *Deputy Vice President (02/2022–Present)*, **Office of Academic Affairs**
    * *Steering Committee Member (09/2022–08/2023)*, Academic Affairs and Planning Steering Committee
    * *Steering Committee Member (07/2020–06/2022)*, Korea University Institute of Data Science (KUIDS)

    * *Steering Committee Member (06/2021–03/2022)*, Academic Affairs and Planning Steering Committee
- **Chung-Ang University – College of Computer Science and Software**, Seoul, Republic of Korea
  – *Assistant Professor (03/2016–08/2019)*, School of Computer Science and Engineering
- **Intel Corporation – Platform Engineering Group**, Silicon Valley (Santa Clara), CA, USA
  – *Systems Engineer (09/2013–02/2016)*, mmWave Standards and Advanced Technology (mSAT) Team (with Dr. Ali S. Sadri)
- **University of Southern California (USC) – Viterbi School of Engineering**, Los Angeles, CA, USA
  – *Annenberg Graduate Fellow (08/2009)*, Awarded with Ph.D. admission in Computer Science from USC (2009)
  – *Ph.D. Research Assistant (01/2011–08/2014)*, Communication Sciences Institute (Advised by Prof. Andreas F. Molisch)
  – *Teaching Assistant (01/2012–05/2013)*, Computer Science and Electrical Engineering Departments (CSCI455x and EE579)
- **InterDigital**, San Diego, CA, USA
  – *Intern (05/2012–08/2012)*, Wireless Systems Evolution Department
  – *Subject Matter Expert in IEEE 802.11ad (01/2012–02/2012)*, Wireless Systems Evolution Department
- **LG Electronics CTO Office**, Seoul, Republic of Korea
  – *Research Engineer (01/2006–08/2009)*, Multimedia Research Laboratory, Seocho R&D Campus

### Industry, Advisory, and Consulting Positions

- **Samsung Electronics (C-Lab), Seoul National University R&D Center**, Seoul, Republic of Korea
  *Advisory Professor (02/2020–08/2020)*, Nonlinear Regression Deep Learning Algorithm Design and Implementation

### Academia (Membership, Editorial Boards, and Services)

- **IEEE**
  – *Senior Member (2018–)*, *Member (2006–2017)*
  – *Distinguished Lecturer (2022–2023)*, **IEEE Communications Society**
  – *Editor (2022–)*, **IEEE Transactions on Machine Learning in Communications and Networking**
  – *Associate Editor (2020–)*, **IEEE Transactions on Vehicular Technology** (Area: Vehicular Electronics and Systems)
  – *Guest Editor (03/2022)*, **IEEE Communications Standards Magazine** (S.I. on Recent and Future Evolution of Wi-Fi)
  – **IEEE Vehicular Technology Society (VTS) Seoul Chapter**
    * *Chapter Treasurer (2022–Present)*, *Chapter Treasurer (2020–2021)*
    * **IEEE VTS Asia Pacific Wireless Communications Symposium (APWCS) Organizing Committee:** *Finance Chair (2022)*, *Finance Co-Chair (2021)*
- **Elsevier**
  – *Editor (2021–)*, **ICT Express** (Area: AI for ICT Applications)
  – *Guest Editor (10/2022)*, **Computer Networks** (S.I. on ML and AI for the Internet of Things, 5G, and Beyond)
  – *Guest Editor (03/2022)*, **ICT Express** (S.I. on Artificial Intelligence and Machine Learning Approaches to Communication)
  – *Guest Editor (06/2021)*, **ICT Express** (S.I. on Mobile and Edge Computing Systems)

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## Awards and Honors

### Research and Academic Excellence (International)

- **Highly Cited Publications (Top 10 Publications)** – *Google Scholar Profile (as of November 26, 2022)*
  (624+) *Energy-efficient rate-adaptive GPS-based positioning for smartphones*, **MobiSys ('10)**
  (157+) *Quality-aware streaming and scheduling for device-to-device video delivery*, **TON ('16)**
  (109+) *Communication-efficient and distributed learning over wireless networks: Principles and applications*, **PIEEE ('21)**
  (107+) *Towards characterizing blockchain-based cryptocurrencies for highly-accurate predictions*, **ISJ ('20)**, ***Best Paper Award***
  (105+) *Residential demand response for renewable energy resources in smart grid systems*, **TII ('17)**
  (103+) *Fast millimeter-wave beam training with receive beamforming*, **JCN ('14)**
  (098+) *Auction-based charging scheduling with deep learning framework for multi-drone networks*, **TVT ('19)**
  (085+) *Energy-efficient mobile charging for wireless power transfer in Internet of things networks*, **IOTJ ('18)**
  (074+) *Cooperative management for PV/ESS-enabled electric vehicle charging stations: A multiagent deep reinforcement learning approach*, **TII ('20)**
  (064+) *Wireless video caching and dynamic streaming under differentiated quality requirements*, **JSAC ('18)**
- **Selected IEEE Magazines and Journals Statistics**
  (Magazines) *4 papers:* [CSM'22.06], [PIEEE'21.05], [CM'19.03], [VTM'17.03]
  (ComSoc/VTS) *44 papers:* **[TMC'review]**, [TVT'review], [TVT'review], [TVT'review], [JCN'review], **[TWC'revision]**, **[TON'revision]**, [IOTJ'revision], **[TMC'accept]**, [JCN'accept], [JCN'accept], [TVT'22.07], **[TMC'22.05]**, [TVT'22.05], [TVT'22.02], [TVT'21.08], **[TMC'21.06]**, [TVT'21.06], **[TWC'21.04]**, [JCN'21.04], [JCN'21.04], **[TWC'20.12]**, [IOTJ'20.10], [JCN'20.08], [JCN'20.02], **[TWC'19.12]**, **[TWC'19.10]**, [TVT'19.10], [IOTJ'19.10], **[TMC'19.07]**, [TVT'19.05], [IOTJ'18.12], **[JSAC'18.11]**, **[JSAC'18.06]**, [TVT'18.04], [IOTJ'18.02], [IOTJ'17.10], [TVT'16.12], **[TON'16.08]**, [JCN'14.10]. [CL'14.09], [CL'14.07], [CL'14.03], [CL'07.01]
  (AI,Informatics) *11 papers:* [TNNLS'review], [TNNLS'review], [TSMC'review], [TNNLS'accept], [TITS'accept], [TII'22.10], [TII'20.05], [TIE'19.02], [TII'17.12], [TII'15.12], [TSMC'15.11]
- **Top Conferences Statistics, *(totally 12 papers)***
  (Quantum) [INFOCOM'23 (review)], [ICSE'23 (review)], [AAAI'23], [ICDCS'22]
  (Networks) (with Mobility/Systems) [WiOpt'22], [INFOCOM'22], [ICDCS'20], [ICDCS'18], [MM'17], [MobiSys'10]
  (AI,Lerning) [CIKM '22], [IJCAI'19]
- **IEEE ICTC Best Paper Award (2022)** – *IEEE Communications Society* (with J.-H. Lee, D.P. Selvam, A.F. Molisch)

  - J.-H. Lee, D.P. Selvam, A.F. Molisch, and J. Kim, "Reinforcement Learning Empowered Massive IoT Access in LEO-based Non-Terrestrial Networks," *IEEE ICTC*, Jeju, Korea, October 2022.
- **Best Special Issue Guest Editor Award (2022)** – *ICT Express (Elsevier), S.I. on Mobile Edge Computing Systems (06/2021)*
- **Distinguished Lecturer (class of 2022–2024)** – *IEEE Systems Council*
- **Distinguished Lecturer (class of 2022–2023)** – *IEEE Communications Society*
- **IEEE VTS Seoul Chapter Award (2022)** – *IEEE Vehicular Technology Society* (with H. Lee)
  "Deep Reinforcement Learning for Loitering Munition Mobility Control: Algorithm Design and Visualization"
- **Spotlight Presentation (2022)** – *ICML Workshop on Dynamic Neural Networks (2022)*
  - W.J. Yun, J.P. Kim, S. Jung, J. Park, M. Bennis, and J. Kim, "Slimmable Quantum Federated Learning," *ICML Workshop on Dynamic Neural Networks*, Baltimore, MD, USA, July 2022.
- **IEEE MMTC Best Journal Paper Award (2021)** – *IEEE Communications Society* (with M. Choi, A.F. Molisch)
  - M. Choi, A.F. Molisch, and J. Kim, "Joint Distributed Link Scheduling and Power Allocation for Content Delivery in Wireless Caching Networks," *IEEE Transactions on Wireless Communications*, 19(12):7810-7824, December 2020.
- **IEEE VTS Seoul Chapter Award (2021)** – *IEEE Vehicular Technology Society* (with Y. Kwak, S. Jung, J.-H. Kim)
  "Quantum Scheduling for Millimeter-Wave Observation Satellite Constellation"
- **IEEE VTS Seoul Chapter Award (2021)** – *IEEE Vehicular Technology Society* (with H. Lee, S. Jung)
  "Distributed and Autonomous Aerial Data Collection in Smart City Surveillance Applications"
- **IEEE ICOIN Best Paper Award (2021)** – *IEEE Computer Society* (with S. Jung, W.J. Yun, J.-H. Kim)
  - S. Jung, W.J. Yun, J. Kim, and J.-H. Kim, "Infrastructure-Assisted Cooperative Multi-UAV Deep Reinforcement Energy Trading Learning for Big-Data Processing," *IEEE ICOIN*, Jeju, Korea, January 2021.
- **IEEE MMTC Outstanding Young Researcher Award (2020)** – *IEEE Communications Society*
- **Bronze Paper Award (2020)** – *2020 IEEE Seoul Section Student Paper Contest* (with S. Park)
  "Reliable Offloading Target Selection using Deep Reinforcement Learning for Large Fire Accident"
- **IEEE Systems Journal Best Paper Award (2020)** – *IEEE Systems Council* (with M. Saad, J. Choi, D. Nyang, A. Mohaisen)
  - M. Saad, J. Choi, D. Nyang, J. Kim, and A. Mohaisen, "Towards Characterizing Blockchain-based Cryptocurrencies for Highly-Accurate Predictions," *IEEE Systems Journal*, 14(1):321-332, March 2020.
- **Gold Paper Award (2019)** – *2019 IEEE Seoul Section Student Paper Contest* (with J. Yoo)
  "Stabilized Super-Resolution Deep Learning Adaptation for UAV-Assisted Mobile Edges: A Lyapunov Optimization Approach"
- **IEEE VTS Seoul Chapter Award (2019)** – *IEEE Vehicular Technology Society* (with S. Park, D. Kwon, M. Shin)
  "Joint Offloading and Streaming in Mobile Edges: A Deep Reinforcement Learning Approach"
- **Next Generation and Standards (NGS) Division Recognition Award (Q1/2005)** – *Intel Corporation*
  For developing a 3-dual sector mmWave backhaul link software stack with mesh, relay, and load balancing capability for modular antenna array (MAA) proof-of-concept (POC)
- **Annenberg Graduate Fellowship Award (2009)** – *University of Southern California*
  Awarded with Ph.D. Admission – 4 Year Full Scholarship ($30,000/year for 4 years, i.e., $120,000)

## Research and Academic Excellence (Korea Regional)

- **Haedong Young Scholar Award (2018)** – *KICS* and *Haedong Foundation*
  For recognizing a researcher under the age of 40 who has made outstanding contributions to communication sciences R&D
- **Outstanding Paper Award (2008)** – *LG Electronics CTO Office, Multimedia Research Laboratory*
  - W. Lee, E. Kim, J. Kim, I. Lee, and C. Lee, "Movement-Aware Vertical Handoff of WLAN and Mobile WiMAX for Seamless Ubiquitous Access," *IEEE Transactions on Consumer Electronics*, 53(4):1268-1275, November 2007.
- **RFID Expert Group President Award (2007)** – *The 3rd RFID/USN Research Paper Contest*
- **ETRI President Award (2006)** – *The 2nd RFID/USN Research Paper Contest*
- **Korea Association of RFID/USN (KARUS) President Award (2005)** – *The 1st RFID/USN Research Paper Contest*
- **Scholarships for Academic Excellence (Fall 1999, Fall 2000)** – *Korea University. Department of Computer Science and Engineering*

## Research and Academic Excellence of the Students under Joongheon Kim's Supervision

- **Excellence Paper Award (02/2022)** – *2022 Summer Workshop on Computer Communications (SWCC)* (with H. Lee, S. Jung)
- **Excellence Paper Award (02/2022)** – *2022 KICS Winter Conference* (with Y. Kim, Y.K. Lee, S. Jung)
- **ICT Express Best Reviewer Award (2021)** – *ICT Express (Elsevier)* (Awarded to Soohyun Park)
- **ICT Express Best Reviewer Award (2021)** – *ICT Express (Elsevier)* (Awarded to Haemin Lee)
- **Haedong Paper Award (06/2021)** – *2021 KICS Summer Conference* (with H. Baek, Y.J. Ha, M. Yoo, S. Jung)
- **Excellence Paper Award (06/2021)** – *2021 KICS Summer Conference* (with B. Lim, W.J. Yun, Y.-C. Ko)
- **Excellence Paper Award (Undergraduate) (06/2021)** – *2021 KICS Summer Conference* (with G. Lee, W.J. Yun, S. Jung)
- **Encouragement Paper Award (11/2020)** – *2020 KICS Fall Conference* (with W.J. Yun)
- **Encouragement Paper Award (06/2020)** – *2020 KICS Summer Conference* (with W.J. Yun)
- **Encouragement Paper Award (02/2020)** – *2020 KICS Winter Conference* (with S. Oh, J. Choi)
- **Encouragement Paper Award (02/2020)** – *2020 KICS Winter Conference* (with J. Kim)

## Teaching and Supervision Excellence

- **Granite Tower Best Teaching Award (Top 5%)** – *Korea University* (Future Mobility Technology, GEQR075) Spring 2022
- **Best Teaching Award (Top 20%)** – *Korea University* (Probability and Random Process, KECE209) Spring 2022

- **Granite Tower Best Teaching Award (Top 5%)** – *Korea University* (Computer Language and Lab, EGRN151) Fall 2021
- **Best Teaching Award (Top 20%)** – *Korea University* (Object Oriented Programming, SEMI104) Fall 2021
- **Granite Tower Best Teaching Award (Top 5%)** – *Korea University* (Introduction to Computers, SEMI103) Spring 2021
- **Best Teaching Award (Top 20%)** – *Korea University* (Probability and Random Process, KECE209) Spring 2021
- **Best Teaching Award (Top 20%)** – *Korea University* (Computer Language and Lab, EGRN151) Fall 2020
- **Granite Tower Best Teaching Award (Top 5%)** – *Korea University* (Computer Language and Lab, EGRN151) Fall 2019

### Academic and University Services

- **Outstanding Contribution Award (02/2022)** – *KIISE Information Network Society*
- **Outstanding Contribution Award (12/2021)** – *Open Standards and ICT Association (OSIA)*
- **Outstanding Contribution Award (11/2021)** – *KICS*
- **Appreciation Recognition (10/2021)** – *Daegu Gyeongbuk Institute of Science and Technology (DGIST)*
- **Outstanding Contribution Award (11/2019)** – *KICS*
- **Fellow Employee Recognition [#3081146] (12/2014)** – *Intel Corporation*
- **Certificate of Appreciation (09/2010)** – *Department of Computer Science, University of Southern California*

### Business Administration

- **The 5th Hyundai/Kia Motors Marketing Forum (02/2004), 2nd Prize Winner (Sales Promotion)**

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## R&D Projects (Totally, 6,280,384 USD ≈ 6,280,384,000 KRW)

### Industry-Funded Projects

- **Advancement Technology Development for Torpedo Deception Strategies in Submarines** 11/2022–11/2026
  Funded by *LIG Nex1* [Grant: $700,000; Primary-PI]
- **Mapping between Real World and Virtual Reality (VR) for End-Edged Cloud Real-Time VR Servers** 09/2020–09/2024
  Funded by *Samsung Electronics – Samsung Advanced Institute of Technology* [Grant: $286,000; Primary-PI]
- **Quantum Machine Learning-based Objection Detection for Point Cloud and its Acceleration** 12/2022–11/2023
  Funded by *Hyundai Motors Group (Hyundai NGV)* [Grant: $100,000; Primary-PI]
- **Distributed Learning Algorithms to Build AI Models with Multi-Center Clinical Data** 11/2022–02/2023
  Funded by *Cipherome* [Grant: $12,000; Primary-PI]
- **Cellular/Wi-Fi Handover Technology Development** 02/2022–12/2022
  Funded by *LG Electronics CTO Division – Smart Mobility Lab., Advanced R&BD Center* [Grant: $88,000; Primary-PI]
- **Research Trends in Digital Twin Applications to Autonomous Driving** 03/2022–04/2022
  Funded by *Hyundai NGV* [Grant: $1,000; Primary-PI]
- **Distributed Learning System Design and Implementation for Clinical Applications** 02/2022–03/2022
  Funded by *Cipherome* [Grant: $15,000; Primary-PI]
- **Super-Resolution Performance Optimization in Mobile Platforms** 05/2020–08/2020
  Funded by *Samsung SDS* [Grant: $15,000; Primary-PI]
- **Deep Learning Algorithms for mVOC Concentration Analysis** 03/2020–06/2020
  Funded by *Samsung Electronics* [Grant: $12,000; Primary-PI]
- **Visual Recognition Software Implementation using Deep Learning Tools** 05/2019–11/2019
  Funded by *Hyundai/Kia Motors Company (Hyundai NGV)* [Grant: $59,500; Primary-PI]
- **A Priori Techniques Research for Efficient Multi-Edge Computing** 06/2017–12/2017
  Funded by *Samsung Electronics Software Center* [Grant: $80,000; Co-PI]

### University/Center-Level Projects

- **Intelligent 6G Wireless Access System Research Center** 04/2021–12/2025
  Funded by *Institute for ICT Promotion (IITP)* [2021-0-00467, Grant: $154,000 (2 yrs); Co-PI]
- **Nano UAV Intelligence Systems Research Lab (NUiSRL) – *ADD Military Special Research Center*** 10/2020–08/2023
  Funded by *Agency for Defense Development (ADD)* [UD200027ED, Grant: $130,000; Co-PI], PI: Kwangwoon University (Korea)
- **5G/Unmanned Vehicle Research Center (5G/UV-RC) – *ITRC*** 06/2020–12/2022
  Funded by *Institute for ICT Promotion (IITP)* [2020-0-01637, Grant: $55,709; Co-PI], PI: Hanyang University (Korea)
- **Human Resource Development for the Biomedical Unstructured Big Data Analysis – *ITRC*** 08/2018–12/2021
  Funded by *Institute for ICT Promotion (IITP)* [2018-0-01833; Co-PI], PI: Seoul National University Hospital (Korea)
- **Intelligent Internet of Energy (IoE) Data Research Center – *ITRC*** 02/2020–05/2020
  Funded by *Institute for ICT Promotion (IITP)* [2018-0-01396; Co-PI], PI: Kookmin University (Korea)

### Government-Funded Projects

- **AI Bots Collaborative Platform and Self-Organizing Artificial Intelligence Technology Development** 04/2022–12/2026
  Funded by *Institute for ICT Promotion (IITP)* [2022-0-00907, Grant: $950,000; Co-PI]
- **Quantum Hyper-Driving: Quantum-Inspired Hyper-Connected and Hyper-Sensing Autonomous Mobility Technologies** 03/2022–02/2025
  Funded by *National Research Foundation of Korea* [2022R1A2C2004869, Grant: $600,000; Primary-PI]
- **K-Starlink: Dynamic Reconfigurable and Intelligent Space-Terrestrial Networks** 06/2021–05/2024
  Funded by *National Research Foundation of Korea* **(Basic Research Lab)** [2021R1A4A1030775, Grant: $161,000 (2 yrs); Co-PI]

- **Development of Integrated Development Framework that supports Automatic Neural Network Generation and Deployment optimized for Runtime Environment** 04/2021–12/2023
  Funded by *Institute for ICT Promotion (IITP)* [2018-0-00170, Grant: $230,000; Co-PI]
- **Integrated Perception Technology Developments for Public Safety Platforms** 06/2019–05/2023
  Funded by *National Research Foundation of Korea* [2019M3E3A1084054, Grant: $400,000; Co-PI]
- **Development of Quantum Deep Reinforcement Learning Algorithm using QAOA** 10/2019–04/2022
  Funded by *Ministry of Science and ICT* [2019M3E4A1080391, Grant: $503,250; Primary-PI]
- **mmWave Radar and Deep Reinforcement Learning based Optimal Policy Autonomous Driving** 06/2019–02/2022
  Funded by *National Research Foundation of Korea* [2019R1A2C4070663, Grant: $275,000; Primary-PI]
- **Development of Privacy-Reinforcing Distributed Transfer-Iterative Learning Algorithm** 07/2019–12/2021
  Funded by *Ministry of Health and Welfare* [HI19C0842, Grant: $150,000; Co-PI]
- **Virtual Presence in Moving Objects through 5G (PriMO-5G)** 06/2018–06/2021
  Funded by *Institute for ICT Promotion (IITP)* [2018-0-00170, Grant: $246,464; Co-PI]
- **Distributed Secure Platform for Scalable Clinical OMOP CDM Models** 04/2019–12/2020
  Funded by *Ministry of Health and Welfare* [HI19C0572, Grant: $90,000; Co-PI]
- **Network Engineering: Development and Application of Novel Data Science Driven Framework for Efficient Network Design** 06/2017–05/2020
  Funded by *National Research Foundation of Korea* **(Basic Research Lab)** [2017R1A4A1015675, Grant: $150,000; Co-PI]
- **mmWave High-Speed Networking Platform Design for Next-Generation Convergence Services** 06/2016–05/2019
  Funded by *National Research Foundation of Korea* [2016R1C1B1015406, Grant: $150,000; Primary-PI]
  – Selected as **Initial Innovation Lab** [Grant: $60,000]
- **Feasibility Study of 60 GHz IEEE 802.11ad for Virtual Reality (VR) Platforms** 04/2017–12/2017
  Funded by *Institute for ICT Promotion (IITP)* [Grant: $33,333; Primary-PI]

Government-Funded Research Institute Projects

- **Autonomous Intelligent COA Search Methods for Cyber-Attacks** 12/2021–11/2022
  Funded by *Agency for Defense Development (ADD)* [UI210009XD, Grant: $100,000; Primary-PI]
- **Research on Intelligent Agent-based CPS Security and Reliability** 05/2021–11/2021
  Funded by *Telecommunications Technology Association (TTA)* [Grant: $48,000; Primary-PI]
- **Multi-GPU based Automotive HPC Platform Development** 04/2020–10/2020
  **(A Development of Driving Decision Engine for Autonomous Driving using Driving Experience Information)**
  Funded by *Electronics and Telecommunications Research Institute* [19HS2720 (IITP 2017-0-00068), Grant: $20,000; Primary-PI]
- **Cooperative Deep Reinforcement Learning for Online Game Multi-Agents** 04/2020–08/2020
  **(Human-Agent Cooperation Algorithm Design in Multi-Agent Environment)**
  Funded by *Electronics and Telecommunications Research Institute* [19YE1400, Grant: $28,000; Primary-PI]
- **Verification Testbed Implementation for Privacy-Preserving Trust Data Generation** 10/2019–11/2019
  Funded by *Electronics and Telecommunications Research Institute* [Grant: $44,000; Co-PI]
- **Measurement and Analysis of Multi-Task GPU Scheduling Delays** 05/2019–10/2019
  **(A Development of Driving Decision Engine for Autonomous Driving using Driving Experience Information)**
  Funded by *Electronics and Telecommunications Research Institute* [19HS2720 (IITP 2017-0-00068), Grant: $40,000; Primary-PI]
- **Probabilistic Decision Making and Econometric Methods for Micro-Grid** 05/2017–04/2019
  Funded by *Korea Electric Power Corporation (KEPCO) Research Institute* [R17XA05-41, Grant: $143,128; Primary-PI]
- **GPU Scheduling Performance Analysis under Queueing Delay Considerations** 05/2018–10/2018
  **(A Development of Driving Decision Engine for Autonomous Driving using Driving Experience Information)**
  Funded by *Electronics and Telecommunications Research Institute* [18HS1420 (IITP 2017-0-00068), Grant: $40,000; Primary-PI]
- **Improving Massive Deep Learning Training via Computation and Communication Acceleration** 04/2018–10/2018
  **(Development of HPC System for Accelerating Large-Scale Deep Learning)**
  Funded by *Electronics and Telecommunications Research Institute* [18HS1710 (IITP 2016-0-00087), Grant: $30,000; Primary-PI]
- **Parsing Techniques for Artificial Neural Network (ANN) Data Processing** 09/2017–11/2017
  **(A Development of Driving Decision Engine for Autonomous Driving using Driving Experience Information)**
  Funded by *Electronics and Telecommunications Research Institute* [17HS2720 (IITP 2017-0-00068), Grant: $40,000; Primary-PI]

University of Southern California (USC) – Viterbi School of Engineering (Ph.D. Research Projects)

- **Video Aware Wireless Networks (VAWN) Research Program**
  Funded by *Intel Labs*, *Verizon Wireless*, and *Cisco Systems*; Under the guidance of Prof. Andreas F. Molisch (University of Southern California, USA) and Prof. Giuseppe Caire (Technische Universität Berlin, Germany)
- **60 GHz Real-Time Wireless Video Broadcasting**
  Supported by a Gift from *Disney Research Zürich*; Under the guidance of Prof. Andreas F. Molisch (University of Southern California, USA), Prof. Yafei Tian (Beihang Univ, China), and Dr. Stefan Mangold (Disney Research Zürich, Switzerland)

## Selected Publications

- **5505+ Citations** (H-index: 35+, i10-index 134+), obtained from Google Scholar Profile (as of November 26, 2022)
- Totally, **107** journals, https://sites.google.com/view/aimlab-kuee/publications/journals
  – **80** IEEE publications, among them, **48** publications are in **IEEE Magazines and ComSoc/VTS Journals**

## Dissertation, Books, and Book Chapters

■ **Ph.D. Dissertation**

- *Elements of Next-Generation Wireless Video Systems: Millimeter-Wave and Device-to-Device Algorithms*
  Ph.D. Dissertation (Computer Science), University of Southern California (Los Angeles, California, USA, August 2014)

■ **Books**

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

■ **Book Chapters**

- Chapter 6. Dynamic Decision-Making for Stabilized Deep Learning Software Platforms, *Advances and Applications in Deep Learning*, IntechOpen, September 2020. (Editor: M.A. Aceves-Fernandez) *(S. Park, D. Kim, J. Kim)*
- Chapter 9. Device-to-Device Communications, *Towards 5G: Applications, Requirements and Candidate Technologies*, Wiley, January 2017. (Editors: R. Vannithamby, S. Talwar) *(A.F. Molisch, M. Ji, J. Kim, D. Burghal, A.S. Tehrani)*
- Chapter 19. Millimeter-Wave (mmWave) Medium Access Control: A Survey, *Opportunities in 5G Networks: A Research and Development Perspective*, CRC Press, April 2016. (Editor: F. Hu) *(J. Kim)*
- Chapter 17. Millimeter-Wave (mmWave) Radio Propagation Characteristics, *Opportunities in 5G Networks: A Research and Development Perspective*, CRC Press, April 2016. (Editor: F. Hu) *(J. Kim)*
- Chapter 22. Weighted Localized Clustering: A Coverage-Aware Reader Collision Arbitration Protocol in RFID Networks, *Handbook on Mobile and Ubiquitous Computing: Status and Perspective*, CRC Press, October 2012. (Editors: L.T. Yang, E. Syukur, S.W. Loke) *(J. Kim, E. Kim, W. Lee, D. Kim, J. Choi, J. Jung, C.K. Shin)*
- Coverage-Time Optimized Dynamic Clustering for Two-Tiered WM2Nets, *Wireless Mesh Networking*, McGraw-Hill, August 2008. (Editor: G. Aggelou) *(J. Kim, W. Lee, E. Kim, T.K. Shih)*

## Selected Papers, *i.e.*, IEEE Journals, Top-Tier Conferences, Awarded/Honored, and GLOBECOM/ICC/VTC

### ■ Quantum Deep Learning: Algorithms, Systems, and Applications

[TNNLS] (Review) Stereoscopic Scalable Quantum Convolutional Neural Networks, ***IEEE Transactions on Neural Networks and Learning Systems***. *(H. Baek, W.J. Yun, J. Kim)*

[TNNLS] (Review) SlimQFL: Quantum Federated Learning using Slimmable Neural Networks, ***IEEE Transactions on Neural Networks and Learning Systems***. *(W.J. Yun, J.P. Kim, S. Jung, J. Park, M. Bennis, J. Kim)*

[TSMC] (Review) Projection Valued Measure-based Quantum Machine Learning for Multi-Class Classification, ***IEEE Transactions on Systems, Man, and Cybernetics: Systems***. *(W.J. Yun, H. Baek, J. Kim)*

[SPL] (Review) Quantum Split Neural Network Learning using Cross-Channel Pooling, ***IEEE Signal Processing Letters***. *(W.J. Yun, H. Baek, J. Kim)*

[SPL] (Review) Scalable Quantum Convolutional Neural Networks, ***IEEE Signal Processing Letters***. *(H. Baek, W.J. Yun, J. Kim)*

[ICML] (Review) ***International Conference on Machine Learning***, July 2023. *(W.J. Yun, H. Baek, J. Park, J. Kim)*

[ICDCS] (Review) ***IEEE International Conference on Distributed Computing Systems***, July 2023. *(J.P. Kim, W.J. Yun, H. Baek, S. Jung, J. Park, M. Bennis, J. Kim)*

[INFOCOM] (Review) ***IEEE INFOCOM***, May 2023. *(W.J. Yun, J.P. Kim, H. Baek, S. Jung, J. Park, M. Bennis, J. Kim)*

[ICSE] (Review) Visual Simulation Software Demonstration for Quantum Multi-Drone Reinforcement Learning, ***IEEE/ACM International Conference on Software Engineering***, May 2023. *(C. Park, J.P. Kim, W.J. Yun, S. Jung, J. Kim)*

[IOTJ] (Major Revision) Quantum Multi-Agent Actor-Critic Neural Networks for Internet-Connected Multi-Robot Coordination in Smart Factory Management, ***IEEE Internet of Things Journal***. *(W.J. Yun, J.P. Kim, S. Jung, J.-H. Kim, J. Kim)*

[AAAI'23] Quantum Multi-Agent Meta Reinforcement Learning, ***AAAI Conference on Artificial Intelligence***, February 2023. *(W.J. Yun, J. Park, J. Kim)* ***(Acceptance Ratio: 19.61% (1,721/8,777))***

[AAAI'23] (Review) Privacy-Preserving Quantum Split Learning, *AAAI Workshop on Privacy-Preserving Artificial Intelligence*, February 2023. *(W.J. Yun, H. Baek, J. Kim)*

[AAAI'23] 3D Scalable Quantum Convolutional Neural Networks for Point Cloud Data Processing in Classification Applications, *AAAI Workshop on AI to Accelerate Science and Engineering*, February 2023. *(H. Baek, W.J. Yun, J. Kim)*

[AAAI'23] FV-Train: Quantum Convolutional Neural Network Training with a Finite Number of Qubits by Extracting Diverse Features, *AAAI Student Abstract and Poster*, February 2023. *(H. Baek, W.J. Yun, J. Kim)*

[ICDCS'22] Quantum Multi-Agent Reinforcement Learning via Variational Quantum Circuit Design, ***IEEE International Conference on Distributed Computing Systems***, July 2022. *(W.J. Yun, Y. Kwak, J.P. Kim, H. Cho, S. Jung, J. Park, J. Kim)*

[ICML'22] Slimmable Quantum Federated Learning, *ICML Workshop on Dynamic Neural Networks*, July 2022. *(W.J. Yun, J.P. Kim, S. Jung, J. Park, M. Bennis, J. Kim)*
**(Spotlight, Oral Presentation)**

[APWCS'21] Quantum Scheduling for Millimeter-Wave Observation Satellite Constellation, *IEEE VTS APWCS*, August 2021. *(J. Kim, Y. Kwak, S. Jung, J.-H. Kim)*
**(IEEE VTS Seoul Chapter Award)**

### ■ Learning and Optimization for Mobility, Networks, Systems, and Multimedia

[ISJ] (Review) Real-Time High-Quality Visualization Systems for Volumetric Contents Rendering: A Lyapunov Optimization Framework, ***IEEE Systems Journal***. *(H. Baek, R. Lee, J.-Y. Kim, Y.K. Lee, S. Jung, J. Kim)*

[TVT] (Review) Two-Stage Self-Adaptive Task Outsourcing Decision Making for Edge-Assisted Multi-UAV Networks, ***IEEE Transactions on Vehicular Technology***. *(S. Jung, C. Park, M. Levorato, J.-H. Kim, J. Kim)*

[TVT] (Review) Delay-Sensitive and Power-Efficient Quality Control of Dynamic Video Streaming using Adaptive Super-Resolution, ***IEEE Transactions on Vehicular Technology***. *(M. Choi, W.J. Yun, J. Kim)*

[TVT] (Review) Cooperative Multi-Agent Deep Reinforcement Learning for Reliable and Energy-Efficient Mobile Access via Multi-UAV Control, ***IEEE Transactions on Vehicular Technology***. *(C. Park, H. Lee, W.J. Yun, S. Jung, C. Cordeiro, J. Kim)*

[JCN] (Review) Age-of-Information Aware Contents Caching and Distribution for Connected Vehicles, ***IEEE/KICS Journal of Communications and Networks***. *(S. Park, C. Park, S. Jung, M. Choi, J. Kim)*

[TMC] (Review) Adaptive and Additive Extra Resource Allocation for Cooperative Awareness Message Broadcasting in Cellular-V2X Networks, ***IEEE Transactions on Mobile Computing***. *(S. Jung, J.-H. Kim, M. Levorato, J. Kim)*

[TON] (Major Revision) SlimFL: Federated Learning with Superposition Coding over Slimmable Neural Networks, ***IEEE/ACM Transactions on Networking***. *(W.J. Yun, Y. Kwak, H. Baek, S. Jung, M. Ji, M. Bennis, J. Park, J. Kim)*

[TWC] (Major Revision) Joint User Clustering and Beamforming using Cross-Entropy based Machine Learning for mmWave-NOMA with Imperfect SIC, ***IEEE Transactions on Wireless Communications***. *(B. Lim, W.J. Yun, J. Kim, Y.-C. Ko)*

[TMC.accept] Learning Location from Shared Elevation Profiles in Fitness Apps: A Privacy Perspective, ***IEEE Transactions on Mobile Computing***, v(n):ppp–ppp, Month Year. *(U. Meteriz, N.F. Yildiran, J. Kim, D. Mohaisen)*

[JCN.accept] Neural Myerson Auction for Truthful and Energy-Efficient Autonomous Aerial Data Delivery, ***IEEE/KICS Journal of Communications and Networks***, v(n):ppp–ppp, Month Year. *(H. Lee, S. Kwon, S. Jung, J. Kim)*

[JCN.accept] Parallelized and Randomized Adversarial Imitation Learning for Safety-Critical Self-Driving Vehicles, ***IEEE/KICS Journal of Communications and Networks***, v(n):ppp–ppp, Month Year. *(W.J. Yun, M. Shin, S. Jung, S. Kwon, J. Kim)*

[ICTC'22] Reinforcement Learning Empowered Massive IoT Access in LEO-based Non-Terrestrial Networks, *IEEE ICTC*, October 2022. *(J.-H. Lee, D.P. Selvam, A.F. Molisch, J. Kim)*
**(Best Paper Award)**

**[WiOpt'22]** Cooperative Video Quality Adaptation for Delay-Sensitive Dynamic Streaming using Adaptive Super-Resolution, ***IEEE International Symposium on Modeling and Optimization in Mobile, Ad hoc, and Wireless Networks***, September 2022. *(M. Choi, W.J. Yun, J. Kim)*

[TVT'22.07] Joint Pilot Design and Channel Estimation using Deep Residual Learning for Multi-Cell Massive MIMO under Hardware Impairments, ***IEEE Transactions on Vehicular Technology***, 71(7):7599–7612, July 2022. *(B. Lim, W.J. Yun, J. Kim, Y. Ko)*

[ICDCS'22] AoI-Aware Markov Decision Policies for Caching, *IEEE ICDCS Ph.D. Student Symposium*, July 2022. *(S. Park, S. Jung, M. Choi, J. Kim)*

[ICDCS'22] Quality-Aware Real-Time Augmented Reality Visualization under Delay Constraints, *IEEE ICDCS Extended Abstract*, July 2022. *(R. Lee, S. Park, S. Jung, J. Kim)*

[ISJ'22.06] Securing Heterogeneous IoT with Intelligent DDoS Attack Behavior Learning, ***IEEE Systems Journal***, 16(2):1974–1983, June 2022. *(N.-N. Dao, T. Phan, U. Sa'ad, J. Kim, T. Bauschert, D.-T. Do, S. Cho)*

[CSM'22.06] Recent and Future Evolution of Wi-Fi, ***IEEE Communications Standards Magazine***, 6(2):8–11, June 2022. *(E. Au, L. Wilhelmsson, T. Baykas, J. Kim)*

[VTC'22-Spring] Adaptive and Stabilized Streaming for Edge-Assisted Connected Vehicles under Heterogeneous Computing Constraints, *IEEE VTC*, June 2022. *(R. Lee, H. Lee, S. Park, J. Kim)*

[VTC'22-Spring] Random Access Protocol Learning in LEO Satellite Networks via Reinforcement Learning, *IEEE VTC*, June 2022. *(J.-H. Lee, H. Seo, J. Park, M. Bennis, J. Kim, Y.-C. Ko)*

**[INFOCOM'22]** Joint Superposition Coding and Training for Federated Learning over Multi-Width Neural Networks, ***IEEE INFOCOM***, May 2022. *(H. Baek, W.J. Yun, Y. Kwak, S. Jung, M. Ji, M. Bennis, J. Park, J. Kim)* ***(Acceptance Ratio: 19.93% (225/1,129))***

[TMC'22.05] Supremo: Cloud-Assisted Low-Latency Super-Resolution in Mobile Devices, ***IEEE Transactions on Mobile Computing***, 21(5):1847–1860, May 2022. *(J. Yi, S. Kim, J. Kim, S. Choi)*

[TVT'22.05] Stabilized Detection Accuracy Maximization using Adaptive SAR Image Processing in LEO Networks, ***IEEE Transactions on Vehicular Technology***, 71(5):5661–5665, May 2022. *(K. Kim, J.-H. Lee, S. Jung, J. Kim, J.-H. Kim)*

[ISJ'22.03] LiteZKP: Lightening Zero-Knowledge Proof-based Blockchains for IoT and Edge Platforms, ***IEEE Systems Journal***, 16(1):112–123, March 2022. *(E. Boo, J. Kim, J. Ko)*

[TVT'22.02] Quality-Aware Deep Reinforcement Learning for Streaming in Infrastructure-Assisted Connected Vehicles, ***IEEE Transactions on Vehicular Technology***, 71(2):2002–2017, February 2022. *(W.J. Yun, D. Kwon, M. Choi, J. Kim, G. Caire, A.F. Molisch)*

[ISJ'21.09] Intelligent Active Queue Management for Stabilized QoS Guarantees in 5G Mobile Networks, ***IEEE Systems Journal***, 15(3):4293–4302, September 2021. *(S. Jung, J. Kim, J.-H. Kim)*

[TVT'21.08] Infrastructure-Assisted On-Driving Experience Sharing for Millimeter-Wave Connected Vehicles, ***IEEE Transactions on Vehicular Technology***, 70(8):7307–7321, August 2021. *(S. Jung, J. Kim, M. Levorato, C. Cordeiro, J.-H. Kim)*

[APWCS'21] Distributed and Autonomous Aerial Data Collection in Smart City Surveillance Applications, *IEEE VTS APWCS*, August 2021. *(H. Lee, S. Jung, J. Kim)*
**(IEEE VTS Seoul Chapter Award)**

[ICML'21] Communication and Energy Efficient Slimmable Federated Learning via Superposition Coding and Successive Decoding, *ICML Workshop on Federated Learning for User Privacy and Data Confidentiality*, July 2021. *(H.Baek, W.J. Yun, S. Jung, M. Ji, J. Kim, J. Park, M. Bennis)*

[TMC'21.06] A Personalized Preference Learning Framework for Caching in Mobile Networks, ***IEEE Transactions on Mobile Computing***, 20(6):2124–2139, June 2021. *(A. Malik, K.S. Kim, J. Kim, W.-Y. Shin)*

[TVT'21.06] Orchestrated Scheduling and Multi-Agent Deep Reinforcement Learning for Cloud-Assisted Multi-UAV Charging Systems, ***IEEE Transactions on Vehicular Technology***, 70(6):5362–5377, June 2021. *(S. Jung, W.J. Yun, M. Shin, J. Kim, J. Kim)*

[Access'21.06] Joint Mobile Charging and Coverage-Time Extension for Unmanned Aerial Vehicles, ***IEEE Access***, 9:94053-94063, June 2021. *(S. Park, M. Choi, W.-Y. Shin, J. Kim)*

[PIEEE'21.05] Communication-Efficient and Distributed Learning Over Wireless Networks: Principles and Applications, ***Proceedings of the IEEE***, 109(5):796–819, May 2021. *(J. Park, S. Samarakoon, A. Elgabli, J. Kim, M. Bennis, S.-L. Kim, M. Debbah)*

[INFOCOM'21] Visualization of Deep Reinforcement Autonomous Aerial Mobility Learning Simulations, *IEEE INFOCOM Extended Abstract*, May 2021. *(G. Lee, W.J. Yun, S. Jung, J. Kim, J.-H. Kim)*

[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, April 2021. *(M. Choi, A.F. Molisch, D.-J. Han, D. Kim, J. Kim, J. Moon)*

[JCN'21.04] Stabilized Adaptive Sampling Control for Reliable Real-Time Learning-based Surveillance Systems, ***IEEE/KICS Journal of Communications and Networks***, 23(2):129–137, April 2021. *(D. Kim, S. Park, J. Kim, J.y. Bang, S. Jung)*

[JCN'21.04] Dynamic Video Delivery using Deep Reinforcement Learning for Device-to-Device Underlaid Cache-Enabled Internet-of-Vehicle Networks, ***IEEE/KICS Journal of Communications and Networks***, 23(2):117–128, April 2021. *(M. Choi, M. Shin, J. Kim)*

[ICOIN'21] Infrastructure-Assisted Cooperative Multi-UAV Deep Reinforcement Energy Trading Learning for Big-Data Processing, *IEEE ICOIN*, January 2021. *(S. Jung, W.J. Yun, J. Kim, J.-H. Kim)*
**(Best Paper Award)**

[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, December 2020. *(M. Choi, A.F. Molisch, J. Kim)*
**(IEEE ComSoc MMTC Best Journal Paper Award (2021))**

[ICDCS'20] Understanding the Potential Risks of Sharing Elevation Information on Fitness Applications, ***IEEE International Conference on Distributed Computing Systems***, November 2020. *(Ü. Meteriz, N.F. Yildiran, J. Kim, D. Mohaisen)* ***(Acceptance Ratio: 17.98% (105/584))***

[IOTJ'20.10] Multiagent DDPG-Based Deep Learning for Smart Ocean Federated Learning IoT Networks, ***IEEE Internet of Things Journal***, 7(10):9895–9903, October 2020. *(D. Kwon, J. Jeon, S. Park, J. Kim, S. Cho)*

[JCN'20.08] Self-Adaptive Power Control with Deep Reinforcement Learning for Millimeter-Wave Internet-of-Vehicles Video Caching, ***IEEE/KICS Journal of Communications and Networks***, 22(4):326–337, August 2020. *(D. Kwon, J. Kim, D. Mohaisen, W. Lee)*

[Access'20.06] Blind Signal Classification Analysis and Impact on User Pairing and Power Allocation in Nonorthogonal Multiple Access, ***IEEE Access***, 8:100916–100929, June 2020. *(M. Choi J. Kim)*

[ICC'20] User Scheduling and Power Allocation for Content Delivery in Caching Helper Networks, *IEEE ICC*, June 2020. *(M. Choi, A.F. Molisch, J. Kim)*

[ISJ'20.03] Towards Characterizing Blockchain-based Cryptocurrencies for Highly-Accurate Predictions, ***IEEE Systems Journal***, 14(1):321–332, March 2020. *(M. Saad, J. Choi, D. Nyang, J. Kim, A. Mohaisen)*
**(IEEE Systems Journal Best Paper Award)**

[JCN'20.02] Numerical Approximation of Millimeter-Wave Frequency Sharing between Cellular Systems and Fixed Service Systems, ***IEEE/KICS Journal of Communications and Networks***, 22(1):37–45, February 2020. *(S. Han, J.-W. Choi, J. Kim)*

[TWC'19.12] Markov Decision Policies for Dynamic Video Delivery in Wireless Caching Networks, ***IEEE Transactions on Wireless Communications***, 18(12):5705–5718, December 2019. *(M. Choi, A. No, M. Ji, J. Kim)*

[GLOBECOM'19] Multi-Agent Deep Reinforcement Learning for Cooperative Connected Vehicles, *IEEE GLOBECOM*, December 2019. *(D. Kwon, 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, October 2019. *(M. Choi, J. Kim, J. Moon)*

[IOTJ'19.10] Two-Stage IoT Device Scheduling with Dynamic Programming for Energy Internet Systems, ***IEEE Internet of Things Journal***, 6(5):8782–8791, October 2019. *(L. Park, C. Lee, J. Kim, A. Mohaisen, S. Cho)*

[TVT'19.10] Blind Signal Classification for Non-Orthogonal Multiple Access in Vehicular Networks, ***IEEE Transactions on Vehicular Technology***, 68(10):9722–9734, October 2019. *(M. Choi, D. Yoon, J. Kim)*

[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, September 2019. *(W. Lee, T. Kang, J.-J. Lee, K. Han, J. Kim, M. Pedram)*

[APWCS'19] Joint Offloading and Streaming in Mobile Edges: A Deep Reinforcement Learning Approach, *IEEE VTS APWCS*, August 2019. *(S. Park, J. Kim, D. Kwon, M. Shin, J. Kim)*
**(IEEE VTS Seoul Chapter Award)**

[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, July 2019. *(J. Koo, J. Yi, J. Kim, M.A. Hoque, S. Choi)*

[MobiSys'19] Multi-Agent Deep Reinforcement Learning for Connected Vehicles, *ACM MobiSys Extended Abstract*, June 2019. *(D. Kwon, S. Park, J. Kim)*

[MobiSys'19] Light-Weight Programming Language for Blockchain, *ACM MobiSys Extended Abstract*, June 2019. *(J. Kim, J. Kim)*

[TVT'19.05] Auction-Based Charging Scheduling With Deep Learning Framework for Multi-Drone Networks, ***IEEE Transactions on Vehicular Technology***, 68(5):4235–4248, May 2019. *(M. Shin, J. Kim, M. Levorato)*

[ICC'19] Probabilistic Caching Policy for Categorized Contents and Consecutive User Demands, *IEEE ICC*, May 2019. *(M. Choi, D. Kim, D.-J. Han, J. Kim, J. Moon)*

[CM'19.03] New Challenges of Wireless Power Transfer and Secured Billing for Internet of Electric Vehicles, ***IEEE Communications Magazine***, 57(3):118–124, March 2019. *(L. Park, S. Jeong, D.S. Lakew, J. Kim, S. Cho)*

[IOTJ'18.12] Internet of Things for Smart Manufacturing System: Trust Issues in Resource Allocation, ***IEEE Internet of Things Journal***, 5(6):4418–4427, December 2018. *(S. Jeong, W. Na, J. Kim, S. Cho)*

[JSAC'18.11] SGCO: Stabilized Green Crosshaul Orchestration for Dense IoT Offloading Services, ***IEEE Journal on Selected Areas in Communications***, 36(11):2538–2548, November 2018. *(N.-N. Dao, D.-N. Vu, W. Na, J. Kim, S. Cho)*

[CCS'18] Secure Compute-VM: Secure Big Data Processing with SGX and Compute Accelerators, *ACM CCS Workshop on System Software for Trusted Execution*, October 2018. *(S. Yoo, H. Kim, J. Kim)*

[ICDCS'18] ShmCaffe: A Distributed Deep Learning Platform with Shared Memory Buffer for HPC Architecture, ***IEEE International Conference on Distributed Computing Systems***, July 2018. *(S. Ahn, J. Kim, E. Lim, W. Choi, A. Mohaisen, S. Kang)* ***(Acceptance Ratio: 20.63% (78/378))***

[JSAC'18.06] Wireless Video Caching and Dynamic Streaming under Differentiated Quality Requirements, ***IEEE Journal on Selected Areas in Communications***, 36(6):1245–1257, June 2018. *(M. Choi, J. Kim, J. Moon)*

[SECON'18] Recipient-Oriented Transaction for Preventing Double Spending Attacks in Private Blockchain, *IEEE SECON Extended Abstract*, June 2018. *(H. Lee, M. Shin, K.S. Kim, Y. Kang, J. Kim)*

[AsiaCCS'18] Mining with Proof-of-Probability in Blockchain, *ACM AsiaCCS Extended Abstract*, June 2018. *(S. Kim, J. Kim)*

[ICSE'18] A Novel Shared Memory Framework for Distributed Deep Learning in High-Performance Computing Architecture, *IEEE/ACM ICSE Companion Volume*, May/June 2018. *(S. Ahn, J. Kim, S. Kang)*

[TVT'18.04] Adaptive Detector Selection for Queue-Stable Word Error Rate Minimization in Connected Vehicle Receiver Design, ***IEEE Transactions on Vehicular Technology***, 67(4):3635–3639, April 2018. *(M. Choi, J. Kim, J. Moon)*

[IOT]'18.02] Energy-Efficient Mobile Charging for Wireless Power Transfer in Internet of Things Networks, ***IEEE Internet of Things Journal***, 5(1):79–92, February 2018. *(W. Na, J. Park, C. Lee, K. Park, J. Kim, S. Cho)*

[MM'17] REQUEST: Seamless Dynamic Adaptive Streaming over HTTP for Multi-Homed Smartphone under Resource Constraints, ***ACM Multimedia***, October 2017. *(J. Koo, J. Yi, J. Kim, M.A. Hoque, S. Choi)* ***(Acceptance Ratio: 27.63% (189/684))***

[IOT]'17.10] Feasibility Study of 60 GHz Millimeter-Wave Technologies for Hyperconnected Fog Computing Applications, ***IEEE Internet of Things Journal***, 4(5):1165–1173, October 2017. *(J. Kim, W. Lee)*

[SOSP'17] A Reliable, Self-Adaptive Face Identification Framework via Lyapunov Optimization, *ACM SOSP Workshop on AI Systems*, October 2017. *(D. Kim, J. Kim, J.Y. Bang)*

[Access'17.09] A Software-based Monitoring Framework for Time-Space Partitioned Avionics Systems, ***IEEE Access***, 5:19132–19143, September 2017. *(C. Shin, C. Lim, J. Kim, H. Roh, W. Lee)*

[Access'17.08] Energy-Efficient Stabilized Automatic Control for Multicore Baseband in Millimeter-Wave Systems, ***IEEE Access***, 5:16584–16591, August 2017. *(J. Kim, J.-J. Lee, J.-K. Kim, W. Lee)*

[Access'17.06] Adaptive Resource Balancing for Serviceability Maximization in Fog Radio Access Networks, ***IEEE Access***, 5:14548–14559, June 2017. *(N.-N. Dao, J. Lee, D.-N. Vu, J. Paek, J. Kim, S. Cho, K. Chung, C. Keum)*

[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, March 2017. *(S. Lee, S. Hyeon, J. Kim, H. Roh, W. Lee)*

[TVT'16.12] Performance of Video Streaming in Infrastructure-to-Vehicle Telematic Platforms With 60-GHz Radiation and IEEE 802.11ad Baseband, ***IEEE Transactions on Vehicular Technology***, 65(12):10111–10115, December 2016. *(J. Kim, S. Kwon, G. Choi)*

[Access'16.12] Numerical Simulation Study for Frequency Sharing between Micro-Cellular Systems and Fixed Service Systems in Millimeter-Wave Bands, ***IEEE Access***, 4:9847–9859, December 2016. *(J. Kim, L. Xian, A.S. Sadri)*

[TON'16.08] Quality-Aware Streaming and Scheduling for Device-to-Device Video Delivery, ***IEEE/ACM Transactions on Networking***, 24(4):2319–2331, August 2016. *(J. Kim, G. Caire, A.F. Molisch)*
**(Best Reading Papers in Device-to-Device Communications by IEEE Communications Society)**

[SIGCOMM'16] A Longitudinal Analysis of .i2p Leakage in the Public DNS Infrastructure, *ACM SIGCOMM Extended Abstract*, August 2016. *(S.H. Jeong, A.R. Kang, J. Kim, H.K. Kim, A. Mohaisen)*

[INFOCOM'16] Buffer-Stable Adaptive Per-Module Power Allocation for Energy-Efficient Millimeter-Wave Modular Antenna Array (MAA) Platforms, *IEEE INFOCOM Extended Abstract*, April 2016. *(J. Kim)*

[GLOBECOM'15] 60 GHz Frequency Sharing Study between Fixed Service Systems and Small-Cell Systems with Modular Antenna Arrays, *IEEE GLOBECOM Workshop on Millimeter-Wave Backhaul and Access*, December 2015. *(J. Kim, L. Xian, R. Arefi, A.S.Sadri)*

[SOSP'15] A Case for Bad big.LITTLE Switching: How to Scale Power-Performance in SI-HMP, *ACM SOSP Workshop on Power-Aware Computing and Systems*, October 2015. *(S. Yoo, Y. Shim, S. Lee, S.-A. Lee, J. Kim)*

[GLOBECOM'14] Required Frequency Rejection in 39 GHz Millimeter-Wave Small Cell Systems, *IEEE GLOBECOM Industry Program*, December 2014. *(J. Kim, L. Xian, A. Maltsev, R. Arefi, A.S.Sadri)*

[JCN'14.10] Fast Millimeter-Wave Beam Training with Receive Beamforming, ***IEEE/KICS Journal of Communications and Networks***, 16(5):512–522, October 2014. *(J. Kim, A.F. Molisch)*

[CL'14.09] Joint Coding and Stochastic Data Transmission for Uplink Cloud Radio Access Networks, ***IEEE Communications Letters***, 18(9):1619–1622, September 2014. *(S.-N. Hong, J. Kim)*

[CL'14.07] A Low-Complexity Algorithm for Neighbor Discovery in Wireless Networks, ***IEEE Communications Letters***, 18(7):1119–1122, July 2014. *(S.-N. Hong, J. Kim)*

[ICC'14] Quality-Aware Millimeter-Wave Device-to-Device Multi-Hop Routing for 5G Cellular Networks, *IEEE ICC*, June 2014. *(J. Kim, A.F. Molisch)*

[CL'14.03] Fast and Low-Power Link Setup for IEEE 802.15.3c Multi-Gigabit/s Wireless Sensor Networks, ***IEEE Communications Letters***, 18(3):455–458, March 2014. *(J. Kim, A. Mohaisen, J.-K. Kim)*

[ITA'14] Joint Scheduling and Stochastic Streaming for Device-to-Device Video Delivery, *IEEE ITA*, February 2014. *(J. Kim, A. Turci, G. Caire, A.F. Molisch)*
**(ITA Graduation Day Talk)**

[MobiCom'13] Adaptive Video Streaming for Device-to-Device Mobile Platforms, *ACM MobiCom Extended Abstract*, October 2013. *(J. Kim, F. Meng, P. Chen, H.E. Egilmez, D. Bethanabhotla, A.F. Molisch, M.J. Neely, G. Caire, A. Ortega)*

[TBC'13.09] Joint Scalable Coding and Routing for 60 GHz Real-Time Live HD Video Streaming Applications, ***IEEE Transactions on Broadcasting***, 59(3):500–512, September 2013. *(J. Kim, Y. Tian, S. Mangold, A.F. Molisch)*

[ICC'13] Quality-Aware Coding and Relaying for 60 GHz Real-Time Wireless Video Broadcasting, *IEEE ICC*, June 2013. *(J. Kim, Y. Tian, S. Mangold, A.F. Molisch)*

[MobiSys'10] Energy-Efficient Rate-Adaptive GPS-based Positioning for Smartphones, ***ACM International Conference on Mobile Systems, Applications, and Services***, June 2010. *(J. Paek, J. Kim, R. Govindan)* ***(Acceptance Ratio: 19.84% (25/126))***

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**(LG Electronics Outstanding Paper Award)**

[TCE'07.05] Coverage-Time Optimized Dynamic Clustering of Networked Sensors for Pervasive Home Networking, ***IEEE Transactions on Consumer Electronics***, 53(2):433–441, May 2007. *(J. Kim, W. Lee, E. Kim, D.-W. Kim, H. Kim)*

[CL'07.01] Optimized Transmission Power Control of Interrogators for Collision Arbitration in UHF RFID Systems, ***IEEE Communications Letters***, 11(1):22–24, January 2007. *(J. Kim, W. Lee, E. Kim, D. Kim, K. Suh)*

[VTC'06-Spring] Energy-Aware Distributed Topology Control for Coverage-Time Optimization in Clustering-Based Heterogeneous Sensor Networks, *IEEE VTC*, May 2006. *(J. Kim, J. Choi, W. Lee)*

[VTC'05-Spring] Low-Energy Localized Clustering: An Adaptive Cluster Radius Configuration Scheme for Topology Control in Wireless Sensor Networks, *IEEE VTC*, May/June 2005. *(J. Kim, S. Kim, D. Kim, W. Lee, E. Kim)*

## ■ Machine Learning, Informatics, and Learning Platforms

[ISJ] (Review) Two-Stage Architectural Fine-Tuning with Neural Architecture Search using Early-Stopping, ***IEEE Systems Journal***. *(Y. Kim, W.J. Yun, Y.K. Lee, S. Jung, J. Kim)*

[TITS.accept] Self-Configurable Stabilized Real-Time Detection Learning for Autonomous Driving Applications, ***IEEE Transactions on Intelligent Transportation Systems***, v(n):ppp–ppp, Month Year. *(W.J. Yun, S. Park, J. Kim, D. Mohaisen)*

[TNNLS.accept] Hierarchical Deep Reinforcement Learning-based Propofol Infusion Assistant Framework in Anesthesia, ***IEEE Transactions on Neural Networks and Learning Systems***, v(n):ppp–ppp, Month Year. *(W.J. Yun, M. Shin, D. Mohaisen, K. Lee, J. Kim)*

[CIKM'22] Hierarchical Reinforcement Learning using Gaussian Random Trajectory Generation in Autonomous Furniture Assembly, ***ACM Conference on Information and Knowledge Management***, October 2022. *(W.J. Yun, D. Mohaisen, S. Jung, J.-K. Kim, J. Kim)*

[TII'22.10] Cooperative Multi-Agent Deep Reinforcement Learning for Reliable Surveillance via Autonomous Multi-UAV Control, ***IEEE Transactions on Industrial Informatics***, 18(10):7086–7096, October 2022. *(W.J. Yun, S. Park, J. Kim, M. Shin, S. Jung, D. Mohaisen, J.-H. Kim)*

[Access'21.09] Spatio-Temporal Split Learning for Privacy-Preserving Medical Platforms: Case Studies with COVID-19 CT, X-Ray, and Cholesterol Data, ***IEEE Access***, 9:121046–121059, September 2021. *(Y.J. Ha, M. Yoo, G. Lee, S. Jung, S. Choi, J. Kim, S. Yoo)*

[DSN'21] Spatio-Temporal Split Learning, *IEEE/IFIP DSN Supplemental Volume*, June 2021. *(S. Park, S. Jung, M. Choi, J. Kim)*

[ISJ'21.03] Multiscale LSTM-Based Deep Learning for Very-Short-Term Photovoltaic Power Generation Forecasting in Smart City Energy Management, ***IEEE Systems Journal***, 15(1):346–354, March 2021. *(D. Kim, D. Kwon, L. Park, J. Kim, S. Cho)*

[ICML'20] XOR Mixup: Privacy-Preserving Data Augmentation for One-Shot Federated Learning, *ICML Workshop on Federated Learning for User Privacy and Data Confidentiality*, July 2020. *(M. Shin, C. Hwang, J. Kim, J. Park, M. Bennis, S.-L. Kim)*

[TII'20.05] Cooperative Management for PV/ESS-Enabled Electric-Vehicle Charging Stations: A Multiagent Deep Reinforcement Learning Approach, ***IEEE Transactions on Industrial Informatics***, 16(5):3493–3503, May 2020. *(M. Shin, D. Choi, J. Kim)*

[ICCV'19] Deep Multi-modal Unsupervised Pen Pressure Stylization, *IEEE/CVF ICCV Demo*, November 2019. *(D. Kim, J. Kim)*

[IJCAI'19] Randomized Adversarial Imitation Learning for Autonomous Driving, ***International Joint Conference on Aritificial Intelligence***, August 2019. *(M. Shin, J. Kim)* ***(Acceptance Ratio: 17.89% (850/4,752))***

[DSN'19] Privacy-Preserving Deep Learning Computation for Geo-Distributed Medical Big-Data Platforms, *IEEE/IFIP DSN Supplemental Volume*, June 2019. *(J. Jeon, J. Kim, J. Kim, K. Kim, A. Mohaisen, J.-K. Kim)*

[ICML'19] Adversarial Imitation Learning via Random Search in Lane Change Decision-Making, *ICML Workshop on AI for Autonomous Driving*, June 2019. *(M. Shin, J. Kim)*

[TIE'19.02] Joint Geometric Unsupervised Learning and Truthful Auction for Local Energy Market, ***IEEE Transactions on Industrial Electronics***, 66(2):1499–1508, February 2019. *(L. Park, S. Jeong, J. Kim, S. Cho)*

[MobiSys'18] Neural Network Syntax Analyzer for Embedded Standardized Deep Learning, *ACM MobiSys Workshop on Embedded and Mobile Deep Learning*, June 2018. *(M. Shin, J. Kim, A. Mohaisen, J.Park, K.H. Lee)*

[Access'18.05] Soft Memory Box: A Virtual Shared Memory Framework for Fast Deep Neural Network Training in Distributed High Performance Computing, ***IEEE Access***, 6:26493–26504, May 2018. *(S. Ahn, J. Kim, E. Lim, S. Kang)*

[TII'17.12] Residential Demand Response for Renewable Energy Resources in Smart Grid Systems, ***IEEE Transactions on Industrial Informatics***, 13(6):3165–3173, December 2017. *(L. Park, Y. Jang, S. Cho, J. Kim)*

[TII'15.12] Energy-Efficient Dynamic Packet Downloading for Medical IoT Platforms, ***IEEE Transactions on Industrial Informatics***, 11(6):1653–1659, December 2015. *(J. Kim)*

[TSMC'15.11] Stochastic Decision Making for Adaptive Crowdsourcing in Medical Big-Data Platforms, ***IEEE Transactions on Systems, Man, and Cybernetics: Systems***, 45(11):1471–1476, November 2015. *(J. Kim, W. Lee)*

## Patents (Granted), *totally, 65*

- **21 US Patents:** (US 10637154), (US 9973364), (US 9887755), (US 9786985), (US 9167562), (US 8842640), (US 8761063), (US 8738068), (US 8619741), (US 8605634), (US 8599731), (US 8565200), (US 8547889), (US 8503317), (US 8493949), (US 8493948), (US 8483171), (US 8422372), (US 8416782), (US 8411644), (US 8379612)
- **20 Korean Patents:** (KR 102444449), (KR 102442891), (KR 102433897), (KR 102370599), (KR 102340895), (KR 102293287), (KR 102244380), (KR 102240442), (KR 102240425), (KR 102234007), (KR 102178895), (KR 102167344), (KR 102052835), (KR 102015429), (KR 101663613), (KR 101619964), (KR 101606951), (KR 101567829), (KR 101558017), (KR 100779165)
- **7 European Patents:** (EP 3255730), (EP 2441203), (EP 2422578), (EP 2343836), (EP 2282601), (EP 2262342), (EP 2260669)
- **11 Chinese Patents:** (CN 107634349), (CN 102461318), (CN 102461050), (CN 102388658), (CN 102349340), (CN 102342162), (CN 102318430), (CN 102318425), (CN 102204115), (CN 102132602), (CN 102057739)
- **6 Japanese Patents:** (JP 5584209), (JP 5584205), (JP 5580308), (JP 5508403), (JP 5368573), (JP 5364785)

## Teaching Experience, Research Supervision, and Professional Activities

### Teaching Experience

■ **Korea University – Graduate Courses, *Faculty Member***

- **IT R&D Policies 1 (ECE723):** Fall 2020
- **Design and Analysis of Wireless Communication Systems (ECE721):** Spring 2021
- **Advanced Network Theory (ECE657):** Fall 2022
- **Smart Mobile Platform (ECE654):** Fall 2021, Fall 2020, Fall 2019
- **Advanced Topics in Socialware IT (ECE545):** Spring 2022
- **Wireless and Mobile Networks (ECE522):** Spring 2020
- **Wireless Network 2 (ITH525)** Fall 2022
- **Wireless Network 1 (ITH524)** Spring 2021

■ **Korea University – Undergraduate Courses, *Faculty Member***

- **Introduction to Artificial Intelligence (IWC420):** Winter 2021 (12/2021–01/2022)
- **Data Communications (KECE316):** Fall 2020
- **Digital System Design and Laboratory (KECE210):** Fall 2020
- **Probability and Random Process (KECE209):** Spring 2022 *(Best Teaching Award, Top 20%)*, Spring 2021 *(Best Teaching Award, Top 20%)*, Spring 2020
- **Digital System (KECE207):** Spring 2020
- **Computer Language and Laboratory (EGRN151):** Fall 2022, Fall 2021 *(Granite Tower Best Teaching Award, Top 5%)*, Fall 2020 *(Best Teaching Award, Top 20%)*, Fall 2019 *(Granite Tower Best Teaching Award, Top 5%)*
- **Object-Oriented Programming (SEMI104):** Fall 2021 *(Best Teaching Award, Top 20%)*
- **Introduction to Computers (SEMI103):** Spring 2021 *(Granite Tower Best Teaching Award, Top 5%)*
- **Future Mobility Technology (GEQR075):** Spring 2022 *(Granite Tower Best Teaching Award, Top 5%)*

■ **Chung-Ang University – College of Computer Science and Software, *Faculty Member***

- **Optimal Design Theory and Applications (Graduate):** Spring 2019, Spring 2018, Spring 2017
- **Topics in Computer Science and Engineering (Graduate):** Fall 2018, Fall 2017, Fall 2016
- **Numerical Analysis (Undergraduate):** Spring 2019
- **Compiler Design (Undergraduate):** Spring 2019, Spring 2018, Spring 2017
- **Principles of Programming Languages (Undergraduate):** Fall 2018, Fall 2017, Fall 2016
- **Algorithm Analysis (Undergraduate):** Fall 2016
- **Operating Systems (Undergraduate):** Spring 2017, Spring 2016
- **Calculus (Undergraduate):** Spring 2017, Spring 2016
- **Mobile Application Development (Undergraduate):** Fall 2018, Fall 2017

■ **University of Southern California – Viterbi School of Engineering, *Teaching Assistant***

- **Wireless and Mobile Networks Design and Lab** [EE579] (Spring 2013), Lectured by **Professor Murali Annavaram**
  Graduate Course dedicated to Android Mobile Platform Research and Programming
- **Programming Systems Design** [CSci455x] (Spring 2012, Fall 2012)
  Undergraduate Course dedicated to Object-Oriented Programming (Java and C++) and Advanced Data Structures

### Research Collaboration and Supervision

■ **Postdoctoral Scholars**

- **Dr. Minseok Choi** (09/2018–02/2019), *Professor* at **Kyung Hee University**, Yongin, Korea
  Jointly with **University of Southern California** (co-advised by Prof. Andreas F. Molisch)
- **Dr. Soyi Jung** (03/2021–08/2021), *Professor* at **Ajou University**, Suwon, Korea
  Jointly with **University of California at Irvine** (co-advised by Prof. Marco Levorato)
- **Dr. Ju-Hyung Lee** (08/2021–), *Postdoctoral Visiting Scholar* at **University of Southern California** (co-advised by Prof. Andreas F. Molisch)

■ **Ph.D. Course Students and Alumni**

- **Soohyun Park** (03/2019–08/2023 (expected)), *Postdoctoral Scholar* at **Korea University**, Seoul, Korea
- **Haemin Lee** (09/2020–02/2024 (expected)), *Postdoctoral Scholar* at **Yonsei University**, Seoul, Korea
- **Won Joon Yun** (03/2021–08/2024 (expected))
- **Hankyul Baek** (03/2021–08/2024 (expected)), *Postdoctoral Scholar* at **Korea University**, Seoul, Korea
- **Hyunsoo Lee** (03/2021–)
- **Chanyoung Park** (09/2022–)
- **Gyu Seon Kim** (03/2023–)

■ **Ph.D. Course Students and Alumni (Tight Collaboration for Ph.D. Dissertation)**
- **Minseok Choi** (Advisor: Prof. Jaekyun Moon at KAIST), *Professor* at **Kyung Hee University**, Yongin, Korea
- **Laihyuk Park** (Advisor: Prof. Sungrae Cho at CAU), *Professor* at **Seoul National University of Science and Technology**, Seoul, Korea
- **Seungyo Ryu** (Advisor: Prof. Dongseung Kim at Korea University), *Researcher* at **LG Electronics**, Changwon, Korea
- **Soyi Jung** (Advisor: Prof. Jae-Hyun Kim at Ajou University), *Professor* at **Ajou University**, Suwon, Korea

■ **M.S. Course Students and Alumni**
- **Kyeongseon Kim** (09/2017–08/2019), *Researcher* at **Upstage**, Seongnam, Korea
- **Dohyun Kwon** (03/2018–02/2020), *Researcher* at **Hyundai Motors Group**, Uiwang, Korea
- **Dohyun Kim** (03/2018–02/2020), *Researcher* at **Naver Corporation**, Seongnam, Korea
- **MyungJae Shin** (03/2018–02/2020), *Engineer* at **mofl** (startup), Daejeon, Korea
- **Jaeho Choi** (03/2019–02/2021), *Researcher (Military Service Exception)* at **Korea Meteorological Administration**, Seoul, Korea
- **Youngkee Kim** (03/2021–02/2023), *Researcher* at **Korea Electronics Technology Institute (KETI)**, Seoul, Korea
- **Minjae Yoo** (03/2021–)
- **Seok Bin Son** (03/2022–)
- **Jae Pyoung Kim** (03/2023–)

■ **Intel Corporation (Santa Clara, California, USA),** ***Graduate Interns***
- **Minseok Choi**, Ph.D. in EE from KAIST (02/2016–07/2016), now with **Kyung Hee University**, Yongin, Korea
- **Hidekazu Shimodaira**, Ph.D. in EEE from Tokyo Institute of Technology (07/2015–12/2015), now with **NTT DOCOMO**, Tokyo, Japan

■ **USC Viterbi School of Engineering (Los Angeles, California, USA),** ***Graduate Students***
- **Feiyu Meng**, M.S. in EE from USC (Summer 2013, Fall 2013), now with **Apple**, Silicon Valley, CA, USA
- **Vivek Sankaravadivel**, M.S. in EE from USC (Spring 2011, Fall 2011), now with **Uber**, Silicon Valley, CA, USA

## Talks and Presentations (Selected)

■ **IEEE Distinguished Lectures**
- *Federated Learning for Medical and Mobile Platforms: Motivation, Challenges, and Potential Solutions*
  **California State University, Long Beach** (Long Beach, CA, USA, 01/2020), Hosted by Prof. Sean Kwon and Prof. Henry Yeh
  IEEE Systems Council – IEEE Coastal Los Angeles Section Chapter

■ **IEEE Conference Tutorials and Special Session Talks**
- **IEEE ICUFN 2022 Tutorial** (Barcelona, Spain, 07/2022), *A Paradigm Shift in Future Networks with Quantum Deep Learning*
- **IEEE ICOIN 2022 Tutorial** (Online, 01/2022), *Advanced Deep Learning Methods for Autonomous Mobility*
- **IEEE ICUFN 2021 Tutorial** (Jeju, Korea, 08/2021), *Distributed and Split Deep Learning: Theory and Applications*
- **IEEE ICAIIC 2021 Tutorial** (Online, 04/2021), *Multi-Agent Deep Reinforcement Learning for Connected and Autonomous Vehicles*
- **IEEE ICTC 2019 Special Session Talk** (Jeju, Korea, 10/2019), *Advanced Deep Learning Methods and Their Applications to Distributed and Network Platforms*
- **IEEE ICOIN 2019 Tutorial** (Kuala Lumpur, Malaysia, 01/2019), *Distributed Platform Research for Emerging Deep Learning Applications*
- **IEEE ICC 2018 Tutorial** (Kansas City, MO, USA, 05/2018), *Securing the Internet of Things: A Machine Learning Approach (Making Machine Learning Practical)*, Joint Presentation wih Prof. Aziz Mohaisen (University of Central Florida, Orlando, FL, USA)

■ **Korean (Local) Conference Tutorials and Special Session Talks**
- **2022 KIPS Fall Conference Tutorial** (Chuncheon, 11/2022), *Quantum Deep Learning Basics*
- **2022 Korea A.I. Conference Tutorial** (Jeju, 09/2022), *Trends in Deep Reinforcement Learning*
- **2022 KICS Summer Conference Tutorial** (Jeju, 06/2022), *Quantum Multi-Agent Deep Reinforcement Learning*
- **2022 KIEES Winner Conference Tutorial** (Online, 02/2022), *Deep Learning Theory and Implementation*
- **2021 Korea A.I. Conference Tutorial** (Jeju, 09/2021), *Understanding the Potential Risks of Sharing Elevation Information on Fitness Applications*
- **2021 JCCI Mobile Machine Learning Special Session** (Online, 04/2021), *Multi-Agent Deep Reinforcement Learning for Autonomous Vehicles*
- **2020 Korea A.I. Conference Tutorial** (Jeju, 12/2020), *Randomized Adversarial Imitation Learning for Autonomous Driving*
- **2020 KICS Fall Conference Tutorial** (Seoul, 11/2020), *Trends in Multi-Agent Deep Reinforcement Learning for Distributed Computing*
- **2020 KICS Summer Conference Tutorial** (Jeju, 08/2020), *Deep Learning Computation for Economic Theory and Its Applications*
- **2020 KICS Winter Conference Tutorial** (Kangwon, 02/2020), *Deep Learning Applications to Computer Networking*
- **2020 KICS Winter Conference Tutorial** (Kangwon, 02/2020), *Deep Neural Network Basics*
- **2019 KICS Fall Conference Special Session Talk** (Seoul, 11/2019), *AI Methods for Network and Mobility Platform*
- **2019 IEEK Hyundai Motors Special Session** (Jeju, 06/2019), *Explainable AI (XAI) and Imitation Learning for Automotive Applications*
- **2019 KIPS Spring Conference Tutorial** (Seoul, 05/2019), *Deep Learning Basics and Representative Models*
- **2019 KICS Winter Conference Tutorial** (Kangwon, 01/2019), *Deep Learning Methods for Advanced Network*
- **2017 KICS Summer Conference Tutorial** (Jeju, 06/2017), *GPU Computing Platforms and Software for Deep Learning*
- **2017 KCC Summer Conference Special Session** (Jeju, 06/2017), *Dynamic Control and Software for Next-Generation Distributed Platforms*
- **2017 KICS Winter Conference Tutorial** (Kangwon, 01/2017), *Machine Learning Techniques for Mobile Computing*

■ **Industry Presentations (Selected)**
- *International:* **Huawei Research Center (Text-Aware Image Understanding Workshop)** (Online, 11/2021), **Ericsson-LG (R&D Hackathon / AI Learning Challenge – Keynote Speech)** (Seoul, Korea, 05/2021), **Huawei Research Center (Deep Learning/Machine Learning for Computer Vision)** (Online, 09/2020), **Huawei Research Center (Fundamental and Applied Problems of Machine Learning)** (Nizhny Novgorod, Russia, 12/2019), **City University of Hong Kong** (Hong Kong, 11/2018), **Intel Communications and Devices Group (iCDG) [Cellular Modem TechTalk]** (Santa Clara, CA, USA, 01/2016), **Nokia Research Center at Berkeley** (Berkeley, CA, USA, 08/2014), **Qualcomm Research Center** (San Diego, CA, USA, 02/2014)
- *Korea:* **Korea Meteorological Administration** (Seoul), **SK Telecom (SKT)** (Seoul), **SK Hynix** (Icheon), **Naver Labs - Robotics Lab** (Pankyo), **ETRI** (Daejeon), **KT AI Tech Center** (Seoul), **LG Electronics** (Seoul), **Posco ICT** (Pankyo), **LG U+** (Seoul), **SK Broadband** (Seoul), **Korea Electronics Technology Institute (KETI)** (Pankyo), **Korea Electric Power Corporation (KEPCO) Research Institute** (Daejeon), **Samsung Electronics - Memory Business** (Hwasung)

■ **Prototyping at Industry Exhibitios**

- *Mobile Edge mmWave Backhaul and Access*; **Mobile World Congress (MWC) 2016** (Barcelona, Spain, 02/2016)
- *mmWave MAA Client Access & Backhaul Platform*; **Intel 360 degree 2016** (Anaheim, CA, 02/2016)
- *mmWave Modular Antenna Array Client Access & Backhaul Platform*; **Intel Asia Innovation Summit 2015** (Taipei, Taiwan, 10/2015)
- *Enabling 5G Densification*; **Intel Developer Forum (IDF) 2015** (San Francisco, CA, USA, 08/2015)
- *Enabling 5G Densification*; **Intel Design and Test Technology Conference (DTTC) 2015** (Portland, OR, USA, 08/2015)
- *Enabling 5G Densification*; **Mobile World Congress (MWC) 2015** (Barcelona, Spain, 03/2015)

### ■ Demonstration at Academic Conferences

- *Quantum Multi-Agent Reinforcement Learning via Variational Quantum Circuit Design*; **IEEE ICDCS 2022** (Bologna, Italy, 07/2022)
- *Visualization of Deep Reinforcement Autonomous Aerial Mobility Learning Simulations*; **IEEE INFOCOM 2021** (Online, 05/2021)
- *Deep Multi-modal Unsupervised Pen Pressure Stylization*; **IEEE/CVF ICCV 2019** (Seoul, Korea, 11/2019)
- *Light-Weight Programming Language for Blockchain*; **ACM MobiSys 2019** (Seoul, Korea, 06/2019)
- *mmWave MAA Client Access & Backhaul Platform*; **IEEE GLOBECOM 2015 (Industry Demonstration ID-14)** (San Diego, CA, 12/2015)
- *mmWave Modular Antenna Array for Next-Generation Wireless Networks*; **IEEE GLOBECOM 2014 (Expo)** (Austin, TX, USA, 12/2014)
- *Adaptive Video Streaming for Device-to-Device Mobile Platforms*; **ACM MobiCom 2013** (Miami, FL, USA, 10/2013)

## Conference Activities and Services

### ■ Organizing Committee (OC) Activities

- **IEEE WiOpt:** 2022 (Organizer, *Caching, Computing and Delivery in Wireless Networks Workshop (CCDWN)*)
- **IEEE GLOBECOM:** 2015 (Organizer, *Workshop on Millimeter-Wave Backhaul and Access (mmWave)*)
- **IEEE ICC:** 2022 (Patronage Chair)
- **IEEE ICTC:** 2022 (TPC Vice Chair for Administration, a.k.a., Secretary), 2021 (Workshop Organizer, *Workshop on KU-AIER (Korea University, A.I. Engineering Research)*), 2021 (Secretary), 2020 (Secretary), 2020 (Special Session Organizing Chair, *Special Session on KU-AIER (Korea University, A.I. Engineering Research*), 2019 (Secretary), 2018 (Secretary)
- **IEEE ICUFN:** 2022 (Workshop Chair), 2021 (Workshop Chair), 2021 (Workshop Organizing Chair, *Artificial Intelligence Emerging Applications (AIEA) Workshop*)
- **IEEE ICAIIC:** 2019 (Publication Chair)
- **IEEE VTS APWCS:** 2022 (Finance Chair), 2021 (Finance Co-Chair), 2017 (Publication Vice Chair)
- **IEEE ICOIN:** 2023 (Workshop Co-Chair), 2023 (Workshop Organizing Chair, *Workshop on Artificial Intelligence and Mobility*), 2022 (Workshop Organizing Chair, *Workshop on Artificial Intelligence and Mobility*), 2021 (Workshop Organizing Chair, *Workshop on Artificial Intelligence and Mobility*), 2020 (Workshop Organizing Chair, *Workshop on Artificial Intelligence and Mobility*)
- **IEEE ICASSP:** 2018 (Special Session Organizing Chair, *Special Session on Cybersecurity and Privacy*)
- **IEEE APCC:** 2022 (Local Arrangement Chair)
- **IEEE ICEIC:** 2021 (Local Arrangement Chair)
- **ACM CoNEXT:** 2019 (Poster Session Chair)

### ■ Technical Program Committee (TPC) Chair-Level Activities

- **CCNC:** 2022 (Track Chair for T7 (*Security, Privacy and Content Protection*))
- **ICTC:** 2022 (TPC Vice Chair for Administration)
- **ICAIIC:** 2023 (TPC Co-Chair), 2022 (TPC Co-Chair), 2021 (TPC Co-Chair), 2020 (TPC Co-Chair), 2019 (TPC Co-Chair)
- **ICOIN:** 2021 (TPC Vice Chair), 2020 (TPC Vice Chair), 2019 (TPC Vice Chair), 2018 (TPC Vice Chair)
- **NAS:** 2019 (Track Co-Chair for Network Track)
- **GLOBECOM:** 2015 (TPC Chair for the *Workshop on Millimeter-Wave Backhaul and Access*)

### ■ Technical Program Committee (TPC) Non-Chair-Level Activities

- **2023:** ICC (Wireless Communications Symposium), ICC (Integrated Sensing and Communication Track), ICC (Reconfigurable Intelligent Surfaces and Smart Environments Track), WCNC, ICOIN, IE
- **2022:** GLOBECOM (Selected Areas in Communications – Machine Learning for Communications), MASS, ICC (Wireless Communications Symposium), WCNC, VTC-Fall, COMNETSAT, ICAIIC, ICTC, ICUFN, ICOIN, IPDPS (*Heterogeneity in Computing Workshop*), ICCC, WCSP, CyberneticsCom, ICEIC, MSN (Track 3: Security, Privacy, Trust, and Blockchain), ICNGC
- **2021:** GLOBECOM (Selected Areas in Communications – Machine Learning for Communications), GLOBECOM (IoTSN), ICC (Wireless Communications Symposium), ICCCN, MSN, COMNETSAT, ICTC, ICTC (*Workshop on Intelligent 6G Communication Systems*), ICTC (*Workshop on KU-AIER (Korea University, A.I. Engineering Research)*), WCNC, ICCC, IGESSC, ICAIIC, ICUFN, ICOIN, MASS, EuCAP, ICEIC, ICNGC, ITC-CSCC
- **2020:** GLOBECOM (Ad-hoc and Sensor Networks Symposium), ICTC, WCNC, WCNC (*Workshop on Aerial Communications in 5G and Beyond Networks*), IGESSC, ICUFN, ICOIN, Blockchain, ICCC, COMNETSAT
- **2019:** ICTC, ICCC, IGESSC, ICUFN, VTC-Spring, ICDCS (Distributed Green Computing & Energy Management), NAS (Network Track), Blockchain, MobiHoc, EuCAP, IE, WISA, SecureComm, ICPADS (Security & Dependable Computing)
- **2018:** ICTC, IGESSC, ICUFN, WCSP, APWCS, ICOIN, AsiaCCS (*Workshop on Security in Cloud Computing*), SigTelCom, ATC, IE
- **2017:** ICUFN, ICTC, IE
- **2016:** ICUFN, VTC-Spring
- **2015:** VTC-Spring, EuCAP
- **2014:** VTC-Fall
- **2012:** MASS (*Workshop on Internet of Things Technology and Architectures*)

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## References

- **Prof. Andreas F. Molisch *(Fellow of the IEEE)***, *Ph.D. Research and Dissertation Advisor*
  – Solomon Golomb – Andrew and Erna Viterbi Chair at the University of Southern California (Los Angeles, California, USA)
  – Professor of Electrical and Computer Engineering at the University of Southern California (Los Angeles, California, USA)
  – URL: `https://wides.usc.edu/founder.html`