Joongheon Kim

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

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)
  – 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 (Advisor: *Prof. Wonjun Lee*, School of Information Security)
  – B.S. (03/1999–02/2004) in Computer Science and Engineering

Awards and Honors

- Best Paper Award – *IEEE VTS APWCS 2019* (12/2019)
- Haedong Young Scholar Award – *The Korean Institute of Communications and Information Sciences* (12/2018)
- Next Generation and Standards (NGS) Division Recognition Award – *Intel Corporation* (Q1/2015)
- Annenberg Graduate Fellowship Award – *University of Southern California* (02/2009)
- Outstanding Research Paper Award – *LG Electronics* (01/2008)

R&D Positions

- **Korea University – School of Electrical Engineering**, Seoul, Republic of Korea
  – *Assistant Professor* (*09/2019–*), Artificial Intelligence and Mobility Laboratory
- **Chung-Ang University – School of Computer Science and Engineering**, Seoul, Republic of Korea
  – *Assistant Professor* (*03/2016–08/2019*), Distributed Platforms and Security Laboratory
- **Intel Corporation – Platform Engineering Group**, Silicon Valley (Santa Clara), California, 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, California, USA
  – *Ph.D. Research and Teaching Assistant* (*01/2011–08/2014*), Communication Sciences Institute (Advisor: Prof. Andreas F. Molisch)
- **InterDigital**, San Diego, California, USA
  – *Intern* (*05/2012–08/2012*), 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

Selected Publications

- The Complete List of Publications: https://joongheon.github.io/publications.html
- The Complete List of Patents (45 US/KR/EU/CN/JP Granted Patents): https://joongheon.github.io/patents.html

■ IEEE/ACM/Representative Full-Length Magazines and Journals

[TII.accept] Cooperative Management for PV/ESS-Enabled Electric-Vehicle Charging Stations: A Multi-Agent Deep Reinforcement Learning Approach, *IEEE Trans. Industrial Informatics*, v(n):ppp–ppp, Month Year. (w/ M. Shin, D.-H. Choi)

[TWC.accept] Markov Decision Policies for Dynamic Video Delivery in Wireless Caching Networks, *IEEE Trans. Wireless Communications*, v(n):ppp–ppp, Month Year. (w/ M. Choi, A. No, M. Ji)

[TVT.accept] Blind Signal Classification for Non-Orthogonal Multiple Access in Vehicular Networks, *IEEE Trans. Vehicular Technology*, v(n):ppp–ppp, Month Year. (w/ M. Choi, D. Yoon)

[SJ.accept] Towards Characterizing Blockchain-based Cryptocurrencies for Highly-Accurate Predictions, *IEEE Systems Journal*, v(n):ppp–ppp, Month Year. (w/ M. Saad, J. Choi, D. Nyang, A. Mohaisen)

[TWC'19.10] Dynamic Power Allocation and User Scheduling for Power-Efficient and Delay-Constrained Multiple Access Networks, *IEEE Trans. Wireless Communications*, 18(10):4846–4858, October 2019. (w/ M. Choi, 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. (w/ L. Park, C. Lee, A. Mohaisen, S. Cho)

[TCAD'19.09] TEI-ULP: Exploiting Body Biasing to Improve the TEI-Aware Ultra-Low Power Methods, *IEEE Trans. CAD of Integrated Circuits and Systems*, 38(9):1758–1770, September 2019. (w/ W. Lee, T. Kang, J.-J. Lee, K. Han, M. Pedram)

[TMC'19.07] Seamless Dynamic Adaptive Streaming in LTE/Wi-Fi Integrated Network under Smartphone Resource Constraints, *IEEE Trans. Mobile Computing*, 18(7):1647–1660, July 2019. (w/ J. Koo, J. Yi, M.A. Hoque, S. Choi)

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

[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. (w/ L. Park, S. Jeong, D.S. Lakew, S. Cho)

[TIE'19.02] Joint Geometric Unsupervised Learning and Truthful Auction for Local Energy Market, *IEEE Trans. Industrial Electronics*, 66(2):1499–1508, February 2019. (w/ L. Park, S. Jeong, 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. (w/ S. Jeong, W. Na, 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. (w/ N.-N. Dao, D.-N. Vu, W. Na, S. Cho)

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

[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. (w/ S. Ahn, E. Lim, S. Kang)

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

[IOTJ'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/ W. Na, J. Park, C. Lee, K. Park, S. Cho)

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

[IOTJ'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. (w/ W. Lee)

[Access'17.09] A Software-based Monitoring Framework for Time-Space Partitioned Avionics Systems, *IEEE Access*, 5:19132–19143, September 2017. (w/ C. Shin, C. Lim, 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. (w/ 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. (w/ N.-N. Dao, J. Lee, D.-N. Vu, J. Paek, 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. (w/ S. Lee, S. Hyeon, 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 Trans. Vehicular Technology*, 65(12):10111–10115, December 2016. (w/ S.-C. 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. (w/ L. Xian, A.S. Sadri)

[TON'16.08] Quality-Aware Streaming and Scheduling for Device-to-Device Video Delivery, *IEEE/ACM Trans. Networking*, 24(4):2319–2331, August 2016. (w/ G. Caire, A.F. Molisch)

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

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

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

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

[TCE'07.11] Movement-Aware Vertical Handoff of WLAN and Mobile WiMAX for Seamless Ubiquitous Access, *IEEE Trans. Consumer Electronics*, 53(4):1268–1275, November 2007. (w/ W. Lee, E. Kim, I. Lee, C. Lee)

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

■ **Top-Tier Conference Contributions**

[IJCAI'19] Randomized Adversarial Imiation Learning for Autonomous Driving, *Int'l Joint Conf. Artificial Intelligence* (w/ M. Shin)

[ICDCS'18] ShmCaffe: A Distributed Deep Learning Platform with Shared Memory Buffer for HPC Architecture, *IEEE Int'l Conf. Distributed Computing Systems* (w/ S. Ahn, E. Lim, W. Choi, A. Mohaisen, S. Kang)

[MM'17] REQUEST: Seamless Dynamic Adaptive Streaming over HTTP for Multi-Homed Smartphone under Resource Constraints, *ACM Int'l Conf. Multimedia* (w/ J. Koo, J. Yi, M.A. Hoque, S. Choi)

[MobiSys'10] Energy-Efficient Rate-Adaptive GPS-based Positioning for Smartphones, *ACM Int'l Conf. Mobile Systems, Applications, and Services* (w/ J. Paek, R. Govindan)

References

- *Available upon request.*