

DONG IN KIM

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OBJECTIVE

A challenging career in the telecommunications institute; in general, cellular wireless communications, mobile communications, energy-harvesting wireless communications, and heterogeneous wireless networks; in particular, signal design and detection, multiple access, interference management, resource allocation, cross-layer design and optimization for wireless information and energy networks.

EDUCATION

Ph.D., Electrical Engineering, December 1990,

University of Southern California, Los Angeles, California.

Dissertation Title: *On the Performance of Common Spreading Code CDMA Packet Radio Systems
With Multiple Capture Capability*

Dissertation Advisor: Professor Robert A. Scholtz

M.S., Electrical Engineering, December 1987,

University of Southern California, Los Angeles, California.

B.S., Electronics Engineering, February 1980,

Seoul National University, Seoul, Korea.

HONOR

IEEE Communications Society Joseph LoCicero Award, for outstanding service as the Founding Editor-in-Chief of the IEEE Wireless Communications Letters and exemplary service to IEEE Communications Society publications, December 10, 2019.

Fellow, The Institute of Electrical and Electronics Engineers (IEEE), for contributions to cross-layer design of wireless communications systems, January 1, 2019.

Fellow, The Korean Academy of Science and Technology (KAST), January 1, 2019.

Member, The National Academy of Engineering of Korea (NAEK), January 1, 2019.

Excellence Basic Research Award, Ministry of Science and ICT of Korea, December 5, 2018.

HAEDONG Scholar Award, Haedong Science & Culture Foundation and The Korean Institute of Communications and Information Sciences (KICS), December 5, 2014.

ERC Excellence Award, Engineering Research Center (ERC), Ministry of Science, ICT & Future Planning of Korea, Energy Harvesting Wireless Communications, May 2014.

ITRC Excellence Award, Information Technology Research Center (ITRC), Ministry of Knowledge Economy of Korea, Cooperative Wireless Communications, June 2008.

SKKU-Fellowship, Sungkyunkwan University (SKKU), September 2007.

CFI New Opportunities Fund Award, Canada Foundation for Innovation (CFI), June 2004.

Academic Achievement Award, University of Southern California, April 1990.

Government Doctoral Fellowship, Ministry of Education of Korea, May 1985.

EMPLOYMENT EXPERIENCE

September 2007 - Present

Professor, School of Information & Communication Engineering, Sungkyunkwan University (SKKU), Korea. Leads the Engineering Research Center (ERC) on Energy Harvesting Communications (<http://erc.skku.edu>) as the **Director** appointed by The Ministry of Science, ICT & Future Planning (MSIP), Korea. Currently working on flexible spectrum utilization in future cellular systems, energy harvesting wireless communications, and cross-layer design for interference and energy management.

September 2006 - August 2007

Professor with Tenure, School of Engineering Science, Simon Fraser University (SFU), Canada. Taught courses in digital communications and spread-spectrum communications. Performed research projects on wideband, broadband, and ultra-wideband (UWB) CDMA for high-data-rate wireless multimedia, signal design and diversity techniques for CDMA/UWB, and cross-layer design for CDMA/UWB systems.

September 2002 - August 2006

Associate Professor with Tenure, School of Engineering Science, Simon Fraser University (SFU), Canada.

October 1997 - August 2002

Associate Professor, Dept. of Electrical and Computer Eng., University of Seoul, Korea.

Taught undergraduate courses in communication engineering and information theory, and graduate courses in mobile communications and error control codes. Performed research projects on design of the hybrid multiple-access scheme for 3rd-generation (3G) cellular systems, multicode DS/CDMA system for high-rate data transmission, and initial code acquisition for inter-cell asynchronous mode. Also, has given many short courses and lectures on the topics of spread-spectrum and wireless communications at several companies.

March 1997 - February 1999

Department Chair (elected by faculty), Dept. of Electrical and Computer Eng., University of Seoul, Korea.

Served for two-year term. Reorganized curriculum at the undergraduate and graduate levels to meet the demands of rapidly growing technologies, hired new faculty members, and established the Institute of Information and Technology through which several research projects have been granted.

April 1991 - September 1997

Assistant Professor, Dept. of Electrical and Computer Eng., University of Seoul, Korea.

September 1988 - December 1990

Research Assistant, Communication Sciences Institute, Dept. of Electrical Engineering-Systems, University of Southern California.

Researched communication and coding theory, packet synchronization, mobile radio techniques, spread-spectrum networks, cellular code-division multiple access (CDMA) and satellite communication systems.

November 1984 - December 1985

Researcher, Korea Telecom Research Laboratories, Seoul, Korea.

Developed a telephone network interface processor for collecting traffic data from local telephone offices, and tested the entire system by connecting the processor with the Vax 11/780 computer through leased line.

VISITING POSITIONS

June 2001 - August 2001 (short-term leave)

Visiting Professor, Dept. of Electrical and Computer Eng., University of Manitoba, Canada.

Collaborated with Prof. Ekram Hossain on CDMA-based wireless multimedia networks.

September 1999 - August 2000 (one-year sabbatical leave)

Visiting Professor, Dept. of Electrical and Computer Eng., University of Victoria, Canada.

Collaborated with Prof. Vijay K. Bhargava on CDMA for wireless multimedia communications.

CONSULTING AND TRAINING

July 1997 - June 1998

Consultant, SAMSUNG Electronics Co. Ltd., Institute of Information and Communication.

Has been involved in '3rd-generation wideband CDMA (WCDMA)' standardization activities together with researchers at the Institute and provided consulting for them to prepare a preliminary SAMSUNG proposal for the IMT-2000 PHY standard meeting, organized by ARIB in Japan and EDGE in Europe.

March 1993 - December 1998

Invited Lecturer, SAMSUNG Electronics Co. Ltd., Advanced Technology Center.

Has developed three new courses on 'Wireless and Mobile Communications' at the Center for practical training purpose: 1) Digital Mobile Communications, 2) Digital Spread Spectrum Communications, 3) Wireless Personal Communications, while teaching from 1993 up to 1998. Teaching evaluations have been performed for my courses taught at the Center, and highly appreciated among the researchers due to which my courses continued to be offered for six consecutive years. The purpose is to provide the researchers with basic understanding and development skills for 'CDMA-based Cellular System Test bed'.

PROFESSIONAL ACTIVITIES

Strategic Planning Committee

January 2016 - December 2016

Has served as Strategic Planning Committee member for the IEEE Publication Services and Products Board (PSPB).

Steering Committee

January 2016 – December 2019

Has served as **Steering Committee Chair/Member** for the IEEE Wireless Communications Letters.

Journal Editor

November 2001 – February 2020

Editor for Spread Spectrum Transmission and Access, IEEE Transactions on Communications.

Has served as **Editor-at-Large** (since 2015) of Wireless Communication I for the IEEE Transactions on Communications.

January 2012 - December 2015

Founding Editor-in-Chief, IEEE Wireless Communications Letters.

Has served as **Founding Editor-in-Chief** for the IEEE Wireless Communications Letters.

January 2002 - December 2011

Editor/Area Editor, IEEE Transactions on Wireless Communications.

Has served as Editor and **Founding Area Editor** (since 2008) of **Cross-layer Design and Optimization** for the IEEE Transactions on Wireless Communications.

February 2001 - December 2001

Editor, IEEE Journal on Selected Areas in Communications (JSAC) - Wireless Communications Series.

Has served as Editor for the IEEE JSAC - Wireless Communications Series.

January 2008 – December 2011

Co-Editor-in-Chief, IEEE/KICS Journal of Communications and Networks (JCN).

Has served as **Co-Editor-in-Chief** for the IEEE/KICS JCN.

January 1999 - December 2005

Editor/Division Editor, IEEE/KICS Journal of Communications and Networks (JCN).

Has served as Editor and **Division Editor** of Wireless Communications for the IEEE/KICS JCN.

July 2017 – September 2018

Guest Editor, IEEE Journal on Selected Areas in Communications (JSAC).

Has served as Guest Editor for Special Issue I and II on “Wireless Transmission of Information and Power” for the IEEE JSAC.

March 2016 - February 2017

Guest Editor, IEEE Communications Magazine.

Has served as Guest Editor for Special Issue on “Practical Perspectives on IoT in 5G Networks: From Theory to Industrial Challenges and Business Opportunities” for the IEEE Communications Magazine.

March 2015 - February 2016

Guest Editor, IEEE Wireless Communications.

Has served as Guest Editor for Special Issue on “Wireless Powered Communications Networks: Architectures, Protocol Designs, and Standardization” for the IEEE Wireless Communications.

June 2011 - May 2012

Guest Editor, IEEE Journal of Selected Topics in Signal Processing (JSTSP).

Has served as Guest Editor for Special Issue on “Signal Processing in Heterogeneous Networks for Future Broadband Wireless Systems” for the IEEE JSTSP.

Conference Executive Chair

IEEE Communications Society, IEEE ICC '22, Seoul, Korea, May 2022.

Conference Technical Program Track Chair/Co-Chair

IEEE Vehicular Technology Society, IEEE VTC '19 Fall, Honolulu, Hawaii, September 2019.

IEEE Vehicular Technology Society, IEEE VTC '18 Spring, Porto, Portugal, June 2018.

Conference Publication Co-Chair

IEEE Communications Society, IEEE GLOBECOM '16, Washington DC, December 2016.

IEEE Communications Society, IEEE ICC '13, Budapest, Hungary, June 2013.

Conference Tutorials Co-Chair

IEEE Vehicular Technology Society, IEEE VTC '13 Spring, Dresden, Germany, June 2013.

Conference Session Chair

IEEE Vehicular Technology Society, IEEE VTC '19 Fall, Honolulu, Hawaii, September 2019.

IEEE Communications Society, IEEE WCNC '12, Paris, France, April 2012.

IEEE Communications Society, IEEE GLOBECOM '09, Honolulu, Hawaii, November 2009.

IEEE Communications Society, IEEE ICC '06, Istanbul, Turkey, June 2006.

IEEE Vehicular Technology Society, IEEE VTC '02 Fall, Vancouver, Canada, September 2002.

IEEE Communications Society, IEEE WCNC '02, Orlando, Florida, March 2002.

IEEE Communications Society, IEEE ICUPC '98, Florence, Italy, October 1998.

IEEE Communications Society, IEEE GLOBECOM '95, Singapore, December 1995.

Conference Technical Program Committees

IEEE Communications Society, IEEE GLOBECOM '17, Singapore, December 2017.

IEEE Communications Society, IEEE ICC '17, Paris, France, May, 2017.

IEEE Communications Society, IEEE GLOBECOM '11, Houston, Texas, December 2011.

IEEE Communications Society, IEEE ICC '11, Kyoto, Japan, June, 2011.

IEEE Communications Society, IEEE GLOBECOM '10, Miami, Florida, December 2010.

IEEE Communications Society, IEEE ICC '10, Capetown, South Africa, May, 2010.
IEEE Communications Society, IEEE GLOBECOM '09, Honolulu, Hawaii, November 2009.
IEEE Vehicular Technology Society, IEEE VTC '09 Fall, Anchorage, Alaska, September 2009.
IEEE Communications Society, IEEE ICC '09, Dresden, Germany, June 2009.
IEEE Communications Society, IEEE GLOBECOM '08, New Orleans, Louisiana, November 2008.
IEEE Communications Society, IEEE GLOBECOM '07, Washington D.C., November 2007.
IEEE Communications Society, IEEE ICC '06, Istanbul, Turkey, June 2006.
IEEE Communications Society, IEEE ICC '05, Seoul, Korea, May 2005.
IEEE Vehicular Technology Society, IEEE VTC '04 Spring, Milan, Italy, April 2004.
IEEE Vehicular Technology Society, IEEE VTC '03 Fall, Orlando, Florida, September 2003.
IEEE Vehicular Technology Society, IEEE VTC '03 Spring, Jeju Island, Korea, April 2003.
IEEE Vehicular Technology Society, IEEE VTC '02 Fall, Vancouver, Canada, September 2002.

Asia Pacific Board (APB)

IEEE Communications Society, APB, Meetings and Conferences Committee (MCC), *Vice Chair*, 2001 - 2003.

Reviewer

IEEE Transactions on Communications, IEEE Transactions on Wireless Communications, IEEE Journal on Selected Areas in Communications, IEEE Transactions on Vehicular Technology, IEEE Wireless Communications Letters, IEEE Communications Letters, Journal of Communications and Networks.

Professional Memberships

IEEE Fellow (Student Member 1989 - 1990, Member 1991 - 2001, Senior Member 2002 - 2018) 2019 - Present.
Professional Engineer of British Columbia, Canada, **P.Eng.**, licensed in January 2006.

RESEARCH GRANTS

(SKKU)

[19] Dong In Kim (PI), et. al., Energy Harvesting Communications Research Center (EHC-RC), NRF, MSIP (Ministry of Science, ICT & Future Planning), Korea, **\$10,000,000** May 2014 - February 2021.

[18] Dong In Kim, Multi-Time-Scale Optimization for Cloud-Based Next Generation Wireless Communication Networks with Cache Placement, NRF grant funded by the Korean government (MSIP) (NRF-2017R1A2B2003953), \$450,000 March 2017 - February 2020.

[17] Dong In Kim, mmWave/Drone-aided Future Cellular Communications, LG Electronics Co., \$30,000 March 2017 - December 2017.

[16] Dong In Kim, Scale-Free Heterogeneous Networks with Limited Feedback, Resource and Interference, National Research Foundation of Korea (NRF) grant funded by the Korean government (MSIP) (NRF-2013R1A2A2A01067195), \$300,000 December 2013 - November 2016.

[15] Dong In Kim, Coordinated Transmission/Reception Using Multiple Distributed Caches, LG Electronics Co., \$90,000 March 2014 - December 2016.

[14] Dong In Kim (PI), et. al., Wireless Transmission Technology for BS/MS Cooperation, IITA, MKE (Ministry of Knowledge Economy), Korea, **\$5,500,000** June 2008 - December 2013.

[13] Dong In Kim, Cooperative Communication for Relaying with Multiple Antennas, LG Electronics Co., \$300,000 January 2009 - December 2013.

[12] Dong In Kim, Dynamic Coordinated Multipoint Transmission/Reception, Samsung Electronics Co., \$50,000 October 2009 - August 2010.

[11] Dong In Kim, Adaptive SC/MRC in Cooperative Communications with Multiple Relays, LG Electronics Co., \$30,000 June 2008 - December 2008.

[10] Dong In Kim, Hybrid of Spectrum Overlay and Underlay in Cognitive Radios, Samsung Electronics Co., \$50,000 February 2008 - November 2008.

[9] Dong In Kim, Multiuser Cognitive Radio (CR) Networks, *SKKU Startup Funds*, \$100,000 September 2007 - August 2008.

(SFU)

[8] Dong In Kim, Ultra Wideband Spread-Spectrum System Laboratory, *CFI Infrastructure Operating Fund*, \$60,000 April 2006 - March 2011.

[7] Dong In Kim, Dynamic Link Adaptation in Heterogeneous Wireless Networks, *NSERC Discovery Grant*, \$155,000 (Annual **\$31,000**) April 2004 - March 2009 (5 years).

[6] Dong In Kim, UWB Application Systems Technology, *International Joint Research Grant*, Inha University, Korea, \$180,000 (Annual \$45,000) September 2003 - August 2007 (4 years).

[5] Dong In Kim, Ultra Wideband Spread-Spectrum System Laboratory, *CFI New Opportunities Fund*, \$200,000 April 2004 - December 2006.

[4] Dong In Kim, Ultra Wideband Spread-Spectrum System Laboratory, *BCKDF (CFI Matching Funds)*, \$200,000 April 2004 - December 2006.

[3] Dong In Kim, High-Speed Wideband CDMA for Wireless Multimedia Services, *SFU Startup Funds*, \$100,000 September 2002 - March 2006.

[2] Dong In Kim, High-order Modulation for High Speed Multi-code CDMA Systems, *SFU PRG Research Grant*, \$10,000 October 2002 - October 2004.

(University of Seoul)

[1] Dong In Kim, *Brain Korea (BK) 21 Project*, Wireless Communications Research Group.

Has taken the leader of the BK 21 Project on ‘CDMA-based Smart Antenna Systems’, funded by the Ministry of Education, Korea. The fund amounts to about **\$700,000** for three years, Sep. 1999 - Aug. 2002.

PUBLICATIONS

Submitted Journal Articles

[S11] J. J. Park, J. H. Moon, H. H. Jang, and D. I. Kim, “Performance Analysis of Power Amplifier Nonlinearity on Multi-Tone SWIPT,” submitted, *IEEE Wireless Commun. Letters*, Sep. 2020.

[S10] S. Gong, J. Lin, J. Zhang, D. Niyato, D. I. Kim, and M. Guizani, “Optimization-driven Machine Learning for Intelligent Reflecting Surfaces Assisted Wireless Networks,” *IEEE Commun. Magazine*, Sep. 2020.

[S9] L. Ismail, D. Niyato, S. Sun, D. T. Hoang, Y. Li, and D. I. Kim, “Jamming Mitigation in JRC Systems via Deep Reinforcement Learning and Backscatter-supported Intelligent Deception Strategy,” submitted, *IEEE Trans. Wireless Commun.*, Aug. 2020.

[S8] N. C. Luong, N. T. T. Van, F. Shaohan, H. T. Nguyen, D. Niyato, and D. I. Kim, “Dynamic Network Service Selection in IRS-Assisted Wireless Networks: A Game Theory Approach,” submitted, *IEEE Wireless Commun. Letters*, Jul. 2020.

[S7] J. H. Park, D. I. Kim, and K. W. Choi, “Analysis and Experiment on Multi-Antenna-to-Multi-Antenna RF Wireless Power Transfer,” submitted, *IEEE Trans. Antennas Propag.*, Jul. 2020.

[S6] H. S. Yoon, D. G. Jo, D. I. Kim, and K. W. Choi, "On-Off Arbitrary Beam Synthesis and Non-Interactive Beam Management for Phased Antenna Array Communications," submitted, *IEEE Trans. Vehic. Technol.*, Jul. 2020.

[S5] N. C. Luong, X. Lu, D. T. Hoang, D. Niyato, and D. I. Kim, "Radio Resource Management in Joint Radar and Communication: A Comprehensive Survey," submitted, *IEEE Commun. Surveys & Tutorials*, Jul. 2020.

[S4] H. T. Nguyen, H. D. Tuan, D. Niyato, D. I. Kim, and H. V. Poor, "Improper Gaussian Signaling for D2D Communication Coexisting MISO Cellular Networks," submitted, *IEEE Trans. Wireless Commun.*, May 2020.

[S3] P. K. Sharma, D. Gupta, and D. I. Kim, "Outage Performance of 3D Mobile UAV Caching for Hybrid Satellite-Terrestrial Networks," submitted, *IEEE Trans. Vehic. Technol.*, Apr. 2020.

[S2] H. T. Nguyen, D. T. Hoang, N. C. Luong, D. Niyato, and D. I. Kim, "A Hierarchical Game Model for OFDM Integrated Radar and Communication Systems," revised, *IEEE Trans. Vehic. Technol.*, Jul. 2020.

[S1] T. T. Anh, N. C. Luong, Z. Xiong, D. Niyato, and D. I. Kim, "Joint Time Scheduling and Transaction Fee Selection in Blockchain-based RF-Powered Backscatter Cognitive Radio Network," revised, *IEEE Internet of Things Journal*, Jul. 2020.

Journal Articles

[J213] J. J. Park, J. H. Moon, K.-Y. Lee, and D. I. Kim, "Transmitter-Oriented Dual Mode SWIPT with Deep Learning Based Adaptive Mode Switching for IoT Sensor Networks," *IEEE Internet of Things Journal*, vol. 7, pp. 8979-8992, Sep. 2020.

[J212] J.-M. Kang, C.-J. Chun, I.-M. Kim, and D. I. Kim, "Deep RNN Based Channel Tracking for Wireless Energy Transfer System," *IEEE Systems Journal*, vol. 14., no. 3, pp. 4340-4343, Sep. 2020.

[J211] J. Kwak, L. B. Le, G. Iosifidis, K. Lee, and D. I. Kim, "Collaboration of Network Operators and Cloud Providers in Software-Controlled Networks," *IEEE Network*, pp. 1-8, published in IEEE Early Access (DOI: 10.1109/MNET.001.1800329) on Aug. 12, 2020.

[J210] J. Kang, Z. Xiong, D. Niyato, S. Xie, and D. I. Kim, "Securing Data Sharing from the Sky: Integrating Blockchains into Drones in 5G and Beyond," accepted, *IEEE Network*, Jul. 2020.

- [J209] J. H. Moon, J. J. Park, K.-Y. Lee, and D. I. Kim, "Heterogeneously Reconfigurable Energy Harvester: An Algorithm for Optimal Reconfiguration," *IEEE Internet of Things Journal*, pp. 1-16, published in IEEE Early Access (DOI: 10.1109/JIOT.2020.3013123) on Jul. 30, 2020.
- [J208] S. H. Kim, S. Y. Park, K. W. Choi, T.-J. Lee, and D. I. Kim, "Backscatter-aided Cooperative Transmission in Wireless-Powered Heterogeneous Networks," *IEEE Trans. Wireless Commun.*, pp. 1-15, published in IEEE Early Access (DOI: 10.1109/TWC.2020.3010544) on Jul. 28, 2020.
- [J207] S. H. Kim and D. I. Kim, "Traffic-Aware Backscatter Communications in Wireless-Powered Heterogeneous Networks," *IEEE Trans. Mobile Computing*, vol. 19, pp. 1731-1744, Jul. 2020.
- [J206] S. Gong, X. Lu, D. T. Hoang, D. Niyato, L. Shu, D. I. Kim, and Y.-C. Liang, "Towards Smart Wireless Communications via Intelligent Reflecting Surfaces: A Contemporary Survey," *IEEE Commun. Surveys & Tutorials*, pp. 1-33, published in IEEE Early Access (DOI: 10.1109/COMST.2020.3004197) on Jun. 22, 2020.
- [J205] B. Lyu, D. T. Hoang, S. Gong, D. Niyato, and D. I. Kim, "IRS-based Wireless Jamming Attacks: When Jammers can Attack without Power," *IEEE Wireless Commun. Letters*, pp. 1-4, published in IEEE Early Access (DOI: 10.1109/LWC.2020.3000892) on Jun. 9, 2020.
- [J204] J.-M. Kang, C.-J. Chun, I.-M. Kim, and D. I. Kim, "Dynamic Power Splitting for SWIPT with Nonlinear Energy Harvesting in Ergodic Fading Channel," *IEEE Internet of Things Journal*, vol. 7, pp. 5648-5665, Jun. 2020.
- [J203] H. H. Jang, K. W. Choi, and D. I. Kim, "Novel Frequency-Splitting SWIPT for Overcoming Amplifier Nonlinearity," *IEEE Wireless Commun. Letters*, vol. 9, pp. 826-829, Jun. 2020.
- [J202] D. Lee, Y. G. Sun, S. H. Kim, I. Sim, Y. M. Hwang, Y. Shin, D. I. Kim, and J. Y. Kim, "DQN-Based Adaptive Modulation Scheme over Wireless Communication Channels," *IEEE Commun. Letters*, vol. 24, pp. 1289-1293, Jun. 2020.
- [J201] J. Yutao, P. Wang, D. Niyato, B. Lin, and D. I. Kim, "Toward an Automated Auction Framework for Wireless Federated Learning Services Market," *IEEE Trans. Mobile Computing*, pp. 1-14, published in IEEE Early Access (DOI: 10.1109/TMC.2020.2994639) on May 14, 2020.
- [J200] S. Feng, D. Niyato, X. Lu, P. Wang, and D. I. Kim, "Dynamic Game and Pricing for Data Sponsored 5G Systems with Memory Effect," in the special issue on Smart Data Pricing for Next Generation Networks of

IEEE J. Select. Areas in Commun., vol. 38, pp. 750-765, Apr. 2020.

[J199] K. W. Choi, S. I. Hwang, A. A. Aziz, J. S. Kim, D. S. Kang, and D. I. Kim, "Simultaneous Wireless Information and Power Transfer (SWIPT) for Internet of Things: Novel Receiver Design and Experimental Validation," *IEEE Internet of Things Journal*, vol. 7, pp. 2996-3012, Apr. 2020.

[J198] P. K. Sharma and D. I. Kim, "Secure 3D Mobile UAV Relaying for Hybrid Satellite-Terrestrial Networks," *IEEE Trans. Wireless Commun.*, vol. 19, pp. 2770-2784, Apr. 2020.

[J197] N. C. Luong, Y. Jiao, P. Wang, D. Niyato, D. I. Kim, and H. Zhu, "A Machine Learning Based Auction for Resource Trading in Fog Computing," *IEEE Commun. Magazine*, vol. 58, pp. 82-88, Mar. 2020.

[J196] H. Abbasizadeh, A. Hejazi, B. S. Rikan, S. Y. Kim, J. Bae, J. M. Lee, J. H. Moon, J. J. Park, Y. G. Pu, K. C. Hwang, Y. Yang, D. I. Kim, and K.-Y. Lee, "A High-Efficiency and Wide-Input Range RF Energy Harvester Using Multiple Rectenna and Adaptive Matching," *Energies*, vol. 13, no. 1023, pp. 1-14, Feb. 2020.

[J195] P. K. Sharma, D. Deepthi, and D. I. Kim, "Outage Probability of 3D Mobile UAV Relaying for Hybrid Satellite-Terrestrial Networks," *IEEE Commun. Letters*, vol. 24, pp. 418-422, Feb. 2020.

[J194] S. Feng, D. Niyato, X. Lu, P. Wang, and D. I. Kim, "Dynamic Model for Network Selection in Next Generation HetNets with Memory-affecting Rational Users," *IEEE Trans. Mobile Computing*, pp. 1-16, published in IEEE Early Access (DOI: 10.1109/TMC.2020.2965450) on Jan. 10, 2020.

[J193] Y. Jiao, P. Wang, D. Niyato, B. Lin, and D. I. Kim, "Mechanism Design for Wireless Powered Spatial Crowdsourcing Networks," *IEEE Trans. Vehic. Technol.*, vol. 69, pp. 920-934, Jan. 2020.

[J192] Y. Zhang, Z. Xiong, D. Niyato, P. Wang, H. V. Poor, and D. I. Kim, "A Game-Theoretic Analysis for Complementary and Substitutable IoT Services Delivery with Externalities," *IEEE Trans. Commun.*, vol. 68, pp. 615-629, Jan. 2020.

[J191] Z. Wei, S. Sun, X. Zhu, D. I. Kim, and D. W. K. Ng, "Resource Allocation for Wireless-Powered Full-Duplex Relaying Systems with Non-Linear Energy Harvesting Efficiency," *IEEE Trans. Vehic. Technol.*, vol. 68, pp. 12079-12093, Dec. 2019.

[J190] J. Y. Kim, Y. M. Hwang, Y. G. Sun, I. Sim, D. I. Kim, and X. Wang, "Detection for Non-Technical Loss by Smart Energy Theft with Intermediate Monitor Meter in Smart Grid," *IEEE Access*, vol. 7, pp. 129043-

129053, Dec. 2019.

[J189] N. C. Luong, D. T. Hoang, S. Gong, D. Niyato, P. Wang, Y.-C. Liang, and D. I. Kim, "Applications of Deep Reinforcement Learning in Communications and Networking: A Survey," *IEEE Commun. Surveys & Tutorials*, vol. 21, no. 4, pp. 3133-3174, Fourth Quarter 2019. (ESI Highly Cited Paper)

[J188] N. M. Tran, M. M. Amri, J. H. Park, S. I. Hwang, D. I. Kim, and K. W. Choi, "A Novel Coding Metasurface for Wireless Power Transfer Applications," *Energies*, vol. 12, no. 4488, pp. 1-14, Nov. 2019.

[J187] Y. Al-Eryani, E. Hossain, and D. I. Kim, "Generalized Coordinated Multipoint (GCoMP)-Enabled NOMA: Outage, Capacity, and Power Allocation," *IEEE Trans. Commun.*, vol. 67, pp. 7923-7936, Nov. 2019.

[J186] H. Abbasizadeh, S. Y. Kim, B. S. Rikan, A. Hejazi, D. Khan, Y. G. Pu, K. C. Hwang, Y. Yang, D. I. Kim, and K.-Y. Lee, "Design of a 900 MHz Dual-Mode SWIPT for Low-Power IoT Devices," *Sensors*, vol. 19, no. 4676, pp. 1-17, Oct. 2019.

[J185] T. T. Anh, N. C. Luong, D. Niyato, D. I. Kim, and L.-C. Wang, "Efficient Training Management for Mobile Crowd-Machine Learning: A Deep Reinforcement Learning Approach," *IEEE Wireless Commun. Letters*, vol. 8, no. 5, pp. 1345-1348, Oct. 2019.

[J184] A. A. Aziz, L. Ginting, D. Setiawan, J. H. Park, N. M. Tran, G. Y. Yeon, D. I. Kim, and K. W. Choi, "Battery-Less Location Tracking for Internet of Things: Simultaneous Wireless Power Transfer and Positioning," *IEEE Internet of Things Journal*, vol. 6, no. 5, pp. 9147-9164, Oct. 2019.

[J183] S. Feng, Z. Xiong, D. Niyato, P. Wang, Z. Han, and D. I. Kim, "Joint Traffic Routing and Virtualized Security Function Activation in Wireless Multihop Networks," *IEEE Trans. Vehic. Technol.*, vol. 69, pp. 9205-9219, Sep. 2019.

[J182] K. W. Choi, L. Ginting, A. A. Aziz, D. Setiawan, J. H. Park, S. I. Hwang, D. S. Kang, M. Y. Chung, and D. I. Kim, "Toward Realization of Long-Range Wireless-Powered Sensor Networks," *IEEE Wireless Communications*, vol. 26, no. 4, pp. 184-192, Aug. 2019.

[J181] Y. M. Saputra, D. T. Hoang, D. N. Nguyen, E. Dutkiewicz, D. Niyato, and D. I. Kim, "Distributed Deep Learning at the Edge: A Novel Proactive and Cooperative Caching Framework for Mobile Edge Networks," *IEEE Wireless Commun. Letters*, vol. 8, no. 4, pp. 1220-1223, Aug. 2019.

- [J180] P. K. Sharma and D. I. Kim, "Random 3D Mobile UAV Networks: Mobility Modeling and Coverage Probability," *IEEE Trans. Wireless Commun.*, vol. 18, pp. 2527-2538, May 2019.
- [J179] Z. Liu, N. C. Luong, W. Wang, D. Niyato, P. Wang, Y.-C. Liang, and D. I. Kim, "A Survey on Blockchain: A Game Theoretical Perspective," *IEEE Access*, vol. 7, pp. 47615-47643, Apr. 2019.
- [J178] J. Kang, Z. Xiong, D. Niyato, D. Ye, D. I. Kim, and J. Zhao, "Towards Secure Blockchain-enabled Internet of Vehicles: Optimizing Consensus Management Using Reputation and Contract Theory," *IEEE Trans. Vehic. Technol.*, vol. 68, pp. 2906-2920, Mar. 2019.
- [J177] J. Kang, Z. Xiong, D. Niyato, P. Wang, D. Ye, and D. I. Kim, "Incentivizing Consensus Propagation in Proof-of-Stake Based Consortium Blockchain Networks," *IEEE Wireless Commun. Letters*, vol. 8, no. 1, pp. 157-160, Feb. 2019.
- [J176] P. K. Sharma and D. I. Kim, "Coverage Probability of 3D Mobile UAV Networks," accepted for publication, *IEEE Wireless Commun. Letters*, vol. 8, no. 1, pp. 97-100, Feb. 2019.
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