Curriculum Vitae

Dr. Sangdon Park

AI Research Engineer, Sayberry Games Inc.

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WORK EXPERIENCE

AI Research Engineer, Sayberry Games Inc.

May 2025 – (Present)

– Research and development of LLM-based AI characters and interactive game systems

– Innovation in game content creation processes using AI technologies

Post-Doctoral Researcher, Information & Electronics Research Institute, KAIST

August 2017 – April 2025 *Advisor: Jun Kyun Choi*

– Research on edge computing, energy trading, and data market optimization

– Exploration and application of AI/LLM technologies

PROFESSIONAL SUMMARY

Dr. Sangdon Park is a distinguished AI researcher and educator with expertise in LLM applications, edge computing, and interactive AI systems. He received his Ph.D. from KAIST in 2017, focusing on energy trading systems and electricity markets in microgrids. From 2017 to April 2025, he served as a post-doctoral researcher at KAIST, where he was awarded the prestigious **Sejong Science Fellowship** (NRF Korea) in March 2022, receiving approximately $120,000 per year for up to 5 years as principal investigator.

Dr. Park's expertise in AI technologies is demonstrated through his extensive **invited talks and seminars** at major universities across Korea, including 9 AI seminars from 2023 to 2025 at institutions such as KAIST AI Semiconductor Department, Kyung Hee National University, and Chungnam National University. These presentations showcase his ability to communicate complex AI concepts effectively to diverse academic audiences.

As a pioneer in AI-driven development, Dr. Park demonstrated exceptional capabilities in **vibe coding**—the ability to rapidly transform creative concepts into functional prototypes using AI tools. His mastery of this innovative coding approach enabled him to complete an **Edge Computing GUI Simulator** in just one month (previously estimated as a 4-year project) and create the **AI Character Conversations** project, which generates natural character interactions beyond simple dialogues. He expertly leverages multiple LLM platforms (ChatGPT, Claude, Gemini) and AI coding assistants to achieve 10x development productivity.

Currently at **Sayberry Games Inc.** (since May 2025), Dr. Park applies his AI expertise to develop innovative game technologies for a 300 million KRW **AI game development project**. His research interests include LLM-based system design, AI character development, interactive AI systems, and enhancing development productivity through vibe coding methodologies. He continues to bridge theoretical rigor with cutting-edge AI applications, positioning himself as a thought leader in the AI community.

EDUCATION

Ph.D. in School of Electrical Engineering, KAIST 2013–2017

Thesis: Dynamic Energy Trading Scheme for Future Smart Grid
Advisor: Prof. Jun Kyun Choi (Media Network Lab.)
Focus: Wireless Communications, Smart Grid, Optimization, Game Theory, Energy Big Data

M.S. in Department of Mathematical Sciences, KAIST 2011–2013

Thesis: Throughput Performance Analysis of Optimal Random Access Policies for Cognitive Radio Networks
Advisor: Prof. Ganguk Hwang (Next Generation Communication Networks Lab.)
Focus: Stochastic Processes, Queueing Theory, Probability Theory, Wireless Communications

B.S. in Department of Mathematical Sciences, KAIST 2006–2011

INVITED TALKS & SEMINARS

AI Seminar, School of Electronic and Information Communication Engineering, Pukyong National University May 14, 2025

AI Semiconductor Department Executive Course Seminar, KAIST May 7, 2025

Mathematics Colloquium AI Seminar, Korea Science Academy of KAIST April 30, 2025

AI Seminar, Kyungpook National University April 24, 2025

AI Seminar, School of Computer Science and Engineering, Chungnam National University April 14, 2025

AI Seminar, School of Electrical Engineering, KAIST December 18, 2024

AI Seminar, Information and Electronic New Materials Engineering, Kyung Hee University (International Campus) November 29, 2024

AI Seminar, School of Electrical Engineering, KAIST November 28, 2024

BK21 FOUR AI Seminar, JIANT-IT Human Resource Development Center, Jeonbuk National University June 1, 2023

GRANTS

Sejong Science Fellowship (Domestic Track), National Research Foundation of Korea 2022–Present
₩120,000,000 (Korean Won) per year ≈ $100,000 (US Dollars) per year for 3+2 years, Currently in the 4st year of the fellowship

Basic Science Research Program, National Research Foundation of Korea 2018–2022
₩50,000,000 (Korean Won) per year ≈ $200,000 (US Dollars), for 4 years
"Learning-based Energy Trading Blockchain Technology using Smart Contract"
This grant usually supports young professors, and this is a highly exceptional case

Brain Korea 21 Plus Program, National Research Foundation of Korea 2017–2019
₩45,000,000 (Korean Won) total ≈ $45,000 (US Dollars) for 1.5 years

PUBLICATIONS

International Journals (* denotes corresponding author, † denotes first author)

(Total 25 papers: 4 first-authored, 13 corresponding-authored)

[1] **Sangdon Park**; Sohee Bae; Joohyung Lee; Youngchul Sung, "Real-Time Dynamic Pricing for Edge Computing Services: A Market Perspective," *IEEE Access*, vol. 12, pp. 134754–134769, 2024.

[2] Mohammed, A.; Lee, J.; **Sangdon Park***, "Dynamic Bandwidth Slicing in Passive Optical Networks to Empower Federated Learning," *Sensors*, vol. 24, no. 15, 2024.

[3] Hyeonseok Seo; Hyeontaek Oh; Jun Kyun Choi; **Sangdon Park***, "Differential Pricing-Based Task Offloading for Delay-Sensitive IoT Applications in Mobile Edge Computing System," *IEEE Internet of Things Journal*, vol. 9, no. 19, pp. 19116–19131, 2022.

[4] Jaeseob Han; Gyeong Ho Lee; **Sangdon Park***; Jun Kyun Choi, "Joint Subcarrier and Transmission Power Allocation in OFDMA-Based WPT System for Mobile-Edge Computing in IoT Environment," *IEEE Internet of Things Journal*, vol. 9, no. 16, pp. 15039–15052, 2022.

[5] Yue Zang; Yuyang Peng; **Sangdon Park**; Han Hai; Fawaz Al-Hazemi; Mohammad Meraj Mirza, "A Novel Cooperative Transmission Scheme in UAV-Assisted Wireless Sensor Networks," *Electronics*, vol. 11, no. 4, 2022.

[6] Jangkyum Kim; Joohyung Lee; **Sangdon Park**; Jun Kyun Choi, "Power Scheduling Scheme for a Charging Facility Considering the Satisfaction of Electric Vehicle Users," *IEEE Access*, vol. 10, pp. 25153–25164, 2022.

[7] Jaeseob Han; Gyeong Ho Lee; **Sangdon Park***; Joohyung Lee; Jun Kyun Choi, "A Multivariate-Time-Series-Prediction-Based Adaptive Data Transmission Period Control Algorithm for IoT Networks," *IEEE Internet of Things Journal*, vol. 9, no. 1, pp. 419–436, 2021.

[8] Jinhwan Jeon; Yoonjin Hwang; Yongseop Jeong; **Sangdon Park**; In So Kweon; Seibum B. Choi, "Lane Detection Aided Online Dead Reckoning for GNSS Denied Environments," *Sensors*, vol. 21, no. 20, 2021.

[9] Hyeontaek Oh; **Sangdon Park***; Jun Kyun Choi; Sungkee Noh, "Deposit Decision Model for Data Brokers in Distributed Personal Data Markets Using Blockchain," *IEEE Access*, vol. 9, pp. 114715–114726, 2021.

[10] Beomhan Baek; Joohyung Lee; Yuyang Peng; **Sangdon Park***, "Three Dynamic Pricing Schemes for Resource Allocation of Edge Computing for IoT Environment," *IEEE Internet of Things Journal*, vol. 7, no. 5, pp. 4292–4303, 2020.

[11] Hyeontaek Oh; **Sangdon Park***; Gyu Myoung Lee; Jun Kyun Choi; Sungkee Noh, "Competitive Data Trading Model with Privacy Valuation for Multiple Stakeholders in IoT Data Markets," *IEEE Internet of Things Journal*, vol. 7, no. 4, pp. 3623–3639, 2020.

[12] Gyohun Jeong; **Sangdon Park***; Ganguk Hwang, "Time Series Forecasting Based Day-Ahead Energy Trading in Microgrids: Mathematical Analysis and Simulation," *IEEE Access*, vol. 8, pp. 63885–63900, 2020.

[13] Jangkyum Kim; Joohyung Lee; **Sangdon Park**; Jun Kyun Choi, "Battery-Wear-Model-Based Energy Trading in Electric Vehicles: A Naive Auction Model and a Market Analysis," *IEEE Transactions on Industrial Informatics*, vol. 15, no. 7, pp. 4140–4151, 2019.

[14] **Sangdon Park**; Ganguk Hwang; Jun Kyun Choi, "Optimal Throughput Analysis of Multiple Channel Access in Cognitive Radio Networks," *Annals of Operations Research*, vol. 277, no. 2, pp. 345–370, 2019.

[15] Yuyang Peng; Jun Li; **Sangdon Park***; Konglin Zhu; Mohammad Mehedi Hassan; Ahmed Alsanad, "Energy-Efficient Cooperative Transmission for Intelligent Transportation Systems," *Future Generation Computer Systems*, vol. 94, pp. 634–640, 2019.

[16] Jaewon Ahn; Joohyung Lee; **Sangdon Park**; Hong-Shik Park, "Power Efficient Clustering Scheme for 5G Mobile Edge Computing Environment," *Mobile Networks and Applications*, vol. 24, no. 2, pp. 643–652, 2019.

[17] Hyeontaek Oh; **Sangdon Park***; Gyu Myoung Lee; Hwanjo Heo; Jun Kyun Choi, "Personal Data Trading Scheme for Data Brokers in IoT Data Marketplaces," *IEEE Access*, vol. 7, pp. 40120–40132, 2019.

[18] Sohee Bae; **Sangdon Park***, "Comparison Between Seller and Buyer Pricing Systems for Energy Trading in Microgrids," *IEEE Access*, vol. 7, pp. 54084–54096, 2019.

[19] Nakyoung Kim; **Sangdon Park***; Joohyung Lee; Jun Kyun Choi, "Load Profile Extraction by Mean-Shift Clustering with Sample Pearson Correlation Coefficient Distance," *Energies*, vol. 11, no. 9, 2018.

[20] Seong-Hwan Kim; **Sangdon Park***; Min Chen; Chan-Hyun Youn, "An Optimal Pricing Scheme for the Energy-Efficient Mobile Edge Computation Offloading with OFDMA," *IEEE Communications Letters*, vol. 22, no. 9, pp. 1922–1925, 2018.

[21] Busik Jang; **Sangdon Park***; Joohyung Lee; Sang-Geun Hahn, "Three Hierarchical Levels of Big-Data Market Model Over Multiple Data Sources for Internet of Things," *IEEE Access*, vol. 6, pp. 31269–31280, 2018.

[22] Sanghong Ahn; Joohyung Lee; **Sangdon Park***; S.H. Shah Newaz; Jun Kyun Choi, "Competitive Partial Computation Offloading for Maximizing Energy Efficiency in Mobile Cloud Computing," *IEEE Access*, vol. 6, pp. 899–912, 2018.

[23] **Sangdon Park**; Joohyung Lee; Ganguk Hwang; Jun Kyun Choi, "Event-Driven Energy Trading System in Microgrids: Aperiodic Market Model Analysis with a Game Theoretic Approach," *IEEE Access*, vol. 5, pp. 26291–26302, 2017.

[24] Minkyung Kim; **Sangdon Park**; Joohyung Lee; Yongjae Joo; Jun Kyun Choi, "Learning-Based Adaptive Imputation Method with kNN Algorithm for Missing Power Data," *Energies*, vol. 10, no. 10, 2017.

[25] **Sangdon Park**; Joohyung Lee; Sohee Bae; Ganguk Hwang; Jun Kyun Choi, "Contribution-Based Energy-Trading Mechanism in Microgrids for Future Smart Grid: A Game Theoretic Approach," *IEEE Transactions on Industrial Electronics*, vol. 63, no. 7, pp. 4255–4265, 2016.

International Conferences

[1] J Lee; M Kim; **Sangdon Park**; J.K. Choi; Y Hwang, "Driver Identification for Different Road Shapes Using Vehicle IoT Sensing Data," in *Proceedings of the 2021 IEEE International Conference on Consumer Electronics (ICCE)*, Las Vegas, NV, USA, January 10–12, 2021.

[2] J Han; **Sangdon Park**; G.H. Lee; M Kim; H Seo; J.K. Choi, "Energy Trading in Wireless Power Transmission System Considering Nonlinear Rectifier," in *Proceedings of the 2018 IEEE 7th Global Conference on Consumer Electronics (GCCE)*, Nara, Japan, October 9–12, 2018.

[3] Eunju Yang; Seong Hwan Kim; TaeWoo Kim; Min Su Jeon; **Sangdon Park**; Chan-Hyun Youn, "An Adaptive Batch-Orchestration Algorithm for the Heterogeneous GPU Cluster Environment in Distributed Deep Learning System," in *Proceedings of the 2018 IEEE International Conference on Big Data and Smart Computing (BigComp)*, Shanghai, China, January 15–17, 2018.

[4] Minkyung Kim; **Sangdon Park**; Kireem Han; Nakyoung Kim; Jun Kyun Choi, "Dynamics of Electricity Consumers for Classifying Power Consumption Data Using PCA," in *Proceedings of the 2018 IEEE International Conference on Big Data and Smart Computing (BigComp)*, Shanghai, China, January 15–17, 2018.

[5] **Sangdon Park**; Justin Weimer; Insup Lee, "Resilient Linear Classification: An Approach to Deal with Attacks on Training Data," in *Proceedings of the 8th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS)*, Pittsburgh, PA, USA, April 18–21, 2017.

[6] **Sangdon Park**; Jae Deok Kim; Ganguk Hwang; Jun Kyun Choi, "Joint Optimal Access and Sensing Policy on Distributed Cognitive Radio Networks with Channel Aggregation," in *Proceedings of the 2016 Eighth International Conference on Ubiquitous and Future Networks (ICUFN)*, Vienna, Austria, July 5–8, 2016.

[7] Hyeontaek Oh; S.H. Shah Newaz; **Sangdon Park**; Jun Kyun Choi, "Maximizing Energy Efficiency in Off-Peak Hours: A Novel Sleep Scheme for WLAN Access Points," in *Proceedings of the 2016 IEEE/IFIP Network Operations and Management Symposium (NOMS)*, Istanbul, Turkey, April 25–29, 2016.

[8] **Sangdon Park**; Ganguk Hwang; Jun Kyun Choi, "Optimal Throughput Analysis of Random Access Policies for Cognitive Radio Networks with Multiple Channel Access," in *Proceedings of the 11th International Conference on Queueing Theory and Network Applications (QTNA)*, Wellington, New Zealand, December 13–15, 2016.

[9] Seonghwa Yun; Kyeongmin Lee; **Sangdon Park**; Jun Kyun Choi, "Energy Efficient Relay Selection Scheme with DRX Mechanism in 3GPP LTE Network," in *Proceedings of the 2013 International Conference on ICT Convergence (ICTC)*, Jeju Island, South Korea, October 14–16, 2013.

STANDARD ACTIVITIES

International Telecommunication Union Telecommunication (ITU-T) Standards

Representative of South Korea, ITU-T SG13 & SG5 *June 2013 – November 2014*

ITU-T SG13 Rapporteurs Meeting *June 2013, Geneva, Switzerland*

Sangdon Park; Seung Hyun Jeon; Jun Kyun Choi; Jeong Yun Kim, "Consideration of classification of sleep mode control on network equipment," SG13RGM-C-06

Seung Hyun Jeon; **Sangdon Park**; Jun Kyun Choi, "Revised draft Recommendation Y.energyMRM for requesting the consent," SG13RGM-C-04

Seung Hyun Jeon; **Sangdon Park**; Jun Kyun Choi; Jeong Yun Kim, "Consideration of classification for CPU power consumption on network equipment," SG13RGM-C-05

ITU-T SG13 Meeting *November 2013, Kampala, Uganda*

Sangdon Park; Gyu Myoung Lee; Jun Kyun Choi, "Proposal of the new draft recommendation Y.energyECN (Energy efficiency class of network equipment)," COM13-C401-E

ITU-T SG13 Rapporteurs Meeting *February 2014, Geneva, Switzerland*

Sangdon Park; Jaewon Ahn; Jun Kyun Choi; Gyu Myoung Lee, "A proposal for definitions of energy efficiency class of network equipment," SG13RGM-C-94

Sangdon Park; Jaewon Ahn; Jun Kyun Choi; Gyu Myoung Lee, "Revised texts for a main chapter of draft recommendation," SG13RGM-C-75

Sangdon Park; Jun Kyun Choi; Gyu Myoung Lee, "A proposal for definitions of energy efficiency class of network equipment," SG13RGM-C-75

TEACHING ACTIVITIES

Design Assistant Spring 2014
"Introduction to Electronics Design Lab.", School of Electrical Engineering at KAIST

Counseling Assistant Fall 2013
School of Electrical Engineering at KAIST

Teaching Assistant Fall 2012
Calculus II, Department of Mathematical Sciences at KAIST

Teaching Assistant Spring 2012
Calculus I, Department of Mathematical Sciences at KAIST

Teaching Assistant Fall 2011
Introduction to Linear Algebra, Department of Mathematical Sciences at KAIST
Probability and Statistics, Department of Mathematical Sciences at KAIST