

GYEONG-MOON PARK

Assistant Professor

[Artificial General Intelligence \(AGI\) Lab.](#)

Computer Science and Engineering, Kyung Hee University ([KHU](#))

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EDUCATION

KAIST

Ph.D. in School of Electrical Engineering

Mar. 2016 - Aug. 2019

Daejeon, Republic of Korea

- Thesis: "Memory-based Continual Learning for Autonomous Intelligent Agent"
- Advisor: Prof. Jong-Hwan Kim

KAIST

M.S. in School of Electrical Engineering

Mar. 2014 - Feb. 2016

Daejeon, Republic of Korea

- Thesis: "Deep ART Memory Based Cognitive Architecture for Robots"
- Advisor: Prof. Jong-Hwan Kim

Sungkyunkwan University

B.S. in Electronic and Electrical Engineering

Mar. 2008 - Feb. 2014

Suwon, Republic of Korea

- Thesis: "The Enhancement of Light Extraction Efficiency of Blue-LED by Using Double Layer Photonic Crystals"
- Advisor: Prof. Bong-Shik Song

EXPERIENCE

Kyung Hee University

Assistant Professor, Computer Science and Engineering

Mar. 2021 - Present

Suwon, Republic of Korea

ETRI

Full-Time Researcher, Artificial Information Research Laboratory

Mar. 2020 - Feb. 2021

Daejeon, Republic of Korea

KAIST

Postdoctoral Fellow, Information and Electronics Research Institute

Sep. 2019 - Feb. 2020

Daejeon, Republic of Korea

RESEARCH KEYWORDS

Learning Methods for Future AI

Continual (Lifelong) Learning, Transfer Learning, Unsupervised Domain Adaptation, Few-Shot Learning, Out-Of-Distribution Generalization, and Online Learning.

Deep Generative Models

High-Fidelity GAN Inversion, Image Manipulation, Talking Head Generation, and 3D Reconstruction.

Multi-Modal AI

Multi-Modal Fusion, Back-Channel Prediction, and Anomaly Detection.

AWARDS

Excellence Award, KAIST

Research Performance Evaluation System for Doctoral Student

Feb. 2018

Daejeon, Republic of Korea

International Conference Papers

- [12] J.-Y. Moon*, K.-H. Park*, J. U. Kim[†], and **G.-M. Park[†]**
 “Online Class Incremental Learning on Stochastic Blurry Task Boundary via Mask and Visual Prompt Tuning”
International Conference on Computer Vision (ICCV), Paris, France, Oct. 2023.
- [11] J. Seo*, J.-S. Kang*, and **G.-M. Park**
 “LFS-GAN: Lifelong Few-Shot Image Generation”
International Conference on Computer Vision (ICCV), Paris, France, Oct. 2023.
- [10] Y.-H. Ahn, **G.-M. Park[†]**, and S. T. Kim[†]
 “LINE: Out-of-Distribution Detection by Leveraging Important Neurons”
Computer Vision and Pattern Recognition (CVPR), Vancouver, Canada, Jun. 2023.
- [9] S.-J. Moon and **G.-M. Park**
 “InterStyle: Encoding an Interest Region for Robust StyleGAN Inversion”
European Conference on Computer Vision (ECCV), Tel-Aviv, Israel, Oct. 2022.
- [8] J. H. Kim, I. U. Yoon, **G.-M. Park**, and J.-H. Kim
 “Non-Probabilistic Cosine Similarity Loss for Few-Shot Image Classification”
The British Machine Vision Conference (BMVC), Manchester, England, Sep. 2020.
- [7] J. H. Kim, **G.-M. Park**, and J.-H. Kim
 “A Two-Phase Multi-Channel Classification Resonance Network”
International Conference on Robot Intelligence Technology and Applications (RiTA), Daejeon, Korea, Nov. 2019.
- [6] D. Sigmund, **G.-M. Park**, and J.-H. Kim
 “Context Preference-based Deep Adaptive Resonance Theory: Integrating User Preference into Episodic Memory Encoding and Retrieval”
IEEE International Joint Conference on Neural Networks (IJCNN), Alaska, USA, May. 2017.
- [5] Y.-H. Yoo, D.-H. Kim, **G.-M. Park**, I.-B. Jeong, S.-H. Baek, S.-J. Ryu, and J.-H. Kim
 “Memory-based Realization of Task Intelligence for Robots in Human Environment”
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) Workshop, Daejeon, Korea, Oct. 2016.
- [4] **G.-M. Park**, S. H. Cho, and J.-H. Kim
 “Biologically-Inspired Episodic Memory Model Considering the Context Information”
IEEE Conference on System, Man, and Cybernetics (SMC), Hungary, Budapest, Oct. 2016.
- [3] **G.-M. Park** and J.-H. Kim
 “Deep Adaptive Resonance Theory for Learning Biologically Inspired Episodic Memory”
IEEE International Joint Conference on Neural Networks (IJCNN), Vancouver, Canada, Jul. 2016.
- [2] **G.-M. Park**, Y.-H. Yoo, and J.-H. Kim
 “REM-ART: Reward-based Electromagnetic Adaptive Resonance Theory”
International Conference on Artificial Intelligence (ICAI), Las Vegas, U.S.A., Jul. 2015.
- [1] **G.-M. Park**, S.-H. Baek, and J.-H. Kim
 “Falling Prevention System from External Disturbances for Humanoid Robots”
International Conference on Robot Intelligence Technology and Applications (RiTA), Beijing, China, Nov. 2014.

International Journal Articles

- [8] A.-H. Shin, S. T. Kim[†], and **G.-M. Park**[†]
“Time Series Anomaly Detection using Transformer-based GAN with Two-Step Masking”
IEEE Access, pp. 1-13, Jun. 2023.
- [7] J.-W. Choi, **G.-M. Park**, and J.-H. Kim
“SR-EM: Episodic Memory Aware of Semantic Relations Based on Hierarchical Clustering Resonance Network”
IEEE Transactions on Cybernetics (TCYB), vol. 52, no. 10, pp. 10339-10351, Oct. 2022.
- [6] **G.-M. Park** and J.-H. Kim
“Adaptive Developmental Resonance Network”
IEEE Transactions on Neural Networks and Learning Systems (TNNLS), vol. 32, no. 10, pp. 4347-4361, Oct. 2021.
- [5] **G.-M. Park**, S.-M. Yoo, and J.-H. Kim
“Convolutional Neural Network with Developmental Memory for Continual Learning”
IEEE Transactions on Neural Networks and Learning Systems (TNNLS), vol. 32, no. 6, pp. 2691-2705, Jun. 2021.
- [4] **G.-M. Park**, J.-W. Choi, and J.-H. Kim
“Developmental Resonance Network”
IEEE Transactions on Neural Networks and Learning Systems (TNNLS), vol. 30, no. 4, pp. 1278-1284, Apr. 2019.
- [3] **G.-M. Park**, Y.-H. Yoo, D.-H. Kim, and J.-H. Kim
“Deep ART Neural Model for Biologically Inspired Episodic Memory and Its Application to Task Performance of Robots”
IEEE Transactions on Cybernetics (TCYB), vol. 48, no. 6, pp. 1786-1799, Jun. 2018.
- [2] D.-H. Kim, **G.-M. Park**, Y.-H. Yoo, I.-B. Jeong, and J.-H. Kim
“Realization of Task Intelligence for Service Robots in an Unstructured Environment”
Annual Reviews in Control (IFAC), vol. 44, no. 1, pp. 9-18, Sep. 2017.
- [1] I.-B. Jeong, W.-R. Ko, **G.-M. Park**, D.-H. Kim, Y.-H. Yoo, and J.-H. Kim
“Task Intelligence of Robots: Neural Model-based Mechanism of Thought and Online Motion Planning”
IEEE Trans. Emerg. Topics Comput. Intell. (TETCI), vol. 1, no. 1, pp. 41-50, Feb. 2017.

PATENTS

- [6] A.-H. Shin and **G.-M. Park**
“Method for Detecting Anomaly in Time Series Data and Computing Device for Executing the Method”
Korean Patent Application (10-2021-0175107), Aug. 1, 2022.
- [5] E.-S. Chung, H.-W. Kim, **G.-M. Park**, J.-G. Park, H.-J. Song, B.-H. Yoo, and R. Han
“System and Method for Adaptive Masking and Non-Directional Language Understanding and Generation”
Korean Patent Application (10-2020-0168645), Dec. 4, 2020.
- [4] **G.-M. Park**, H.-W. Kim, J.-G. Park, H.-J. Song, B.-H. Yoo, E.-S. Chung, and R. Han
“Device and Method for Learning Natural Language Processing Comprising External Memory Network”
Korean Patent Application (10-2020-0141061), Oct. 28, 2020.
- [3] H.-J. Song, H.-W. Kim, **G.-M. Park**, B.-H. Yoo, E.-S. Chung, and R. Han
“Method and Apparatus for Multi-level Verification Learning”
Korean Patent Application (10-2020-0104620), Aug. 20, 2020.

- [2] H.-W. Kim, **G.-M. Park**, J.-G. Park, H.-J. Song, B.-H. Yoo, E.-S. Chung, and R. Han
 “Method and Apparatus for Online Bayesian Few-Shot Learning”
Korean Patent Application (10-2020-0075025), Jun. 19, 2020.
- [1] B.-S. Song, G.-B. Park, and **G.-M. Park**
 “A Light Emitting Diode Containing a Double-Layered Photonic Crystal Structure”
Korean Patent Registration (10-1529817), Feb. 25, 2014.

TEACHING

Kyung Hee University

Assistant Professor, Computer Science and Engineering

Mar. 2021 - Present
 Suwon, Republic of Korea

- CSE203: “Computer Architecture”
- AI7005: “Advanced Deep Learning” (Graduate)
- CSE7521: “Advanced Probability and Statistics” (Graduate)
- CSE406: “Capstone Design”
- CSE495: “Independent Learning and Research”

RESEARCH PROJECTS

Multi-Modal Back-Channel Prediction

Principal Investigator, \$50,000

2023 - 2023
Supervision: ETRI

Cloud Continuum for Enabling Large Scale AI Services

Participating Researcher, \$7,500,000

2023 - 2031
Supervision: IITP

Video and Audio-Driven Lip Sync Generation Models

Principal Investigator, \$150,000

2022 - 2024
Supervision: ETRI

Patient-Specific General Intelligence for Effective Early Diagnosis of Arrhythmia

Principal Investigator, \$90,000

2021 - 2024
Supervision: NRF

Research Proposal in the Field of Artificial General Intelligence

Principal Investigator, \$80,000

2021 - 2021
Supervision: ETRI

ACADEMIC SERVICES

Conference Reviewer

2020 – Present

- Computer Vision and Pattern Recognition (CVPR)
- International Conference on Computer Vision (ICCV)
- European Conference on Computer Vision (ECCV)
- Empirical Methods in Natural Language Processing (EMNLP)
- International Conference on Robotics and Automation (ICRA)

Journal Reviewer

2016 – Present

- IEEE Trans. on Cybernetics (TCYB)
- IEEE Trans. on Industrial Electronics (TIE)
- IEEE Robotics and Automation Letters (RA-L)
- IEEE Access