

Jin Hyun Park

Ph.D. Student, Computer Science and Engineering, Texas A&M University

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RESEARCH INTERESTS

Machine learning, computational neuroscience, and natural language processing. In particular, biologically inspired neural network architectures, the evolutionary origins of predictive behavior, and learning-based control for physical systems.

EDUCATION

Ph.D. in Computer Science and Engineering Aug 2022 – May 2027 (expected)

Texas A&M University, College Station, TX, USA Advisor: Yoonsuck Choe

B.Sc. in Computer Science, First Class Honours Sep 2018 – Jul 2021

University of Bristol, Bristol, UK Advisors: Rui Ponte Costa, Cian O'Donnell

PUBLICATIONS

C: conference, J: journal, W: workshop, A: arXiv preprint. * denotes equal contribution.

- [C2] Soha Lee, Soojin Lee, Heesung Yang, Hyunju Song, Hyunji Lee, Jinsan An, Jeongwan Shin, **Jin Hyun Park**, Jun Lee, Hyeyoung Park, Kilim Nam. *KoNeoBench: A Curated Evaluation Dataset for LLM Understanding of Korean Neologisms*. Findings of EMNLP, 2026.
- [C1] Seyyed Ali Ayati*, **Jin Hyun Park***, Yichen Cai, Marcus Botacin. *Making Acoustic Side-Channel Attacks on Noisy Keyboards Viable with LLM-Assisted Spectrograms' "Typo" Correction*. 19th USENIX Workshop on Offensive Technologies (WOOT), 2025. [arXiv:2504.11622](https://arxiv.org/abs/2504.11622)
- [J1] William Kang, Chris Anand, **Jin Hyun Park**, Yoonsuck Choe. *Evolutionary Factors Contributing to the Emergence of Prediction*. Adaptive Behavior, 2025. [doi:10.1177/10597123251364746](https://doi.org/10.1177/10597123251364746)
- [W1] Alex Alvarez*, **Jin Hyun Park***, Yoonsuck Choe. *Saliency Thresholds in Neural Code and its Relation to the Power-Law, Gaussian, and Lambert W Function*. NeurIPS Workshop on Symmetry and Geometry in Neural Representations (NeurReps), 2025. [OpenReview](https://openreview.net/forum?id=8833333333333333)
- [A2] **Jin Hyun Park**, Cheng Zhang, Yoonsuck Choe. *Incorporating Visual Cortical Lateral Connection Properties into CNN: Recurrent Activation and Excitatory-Inhibitory Separation*. arXiv preprint, 2025. [arXiv:2509.15460](https://arxiv.org/abs/2509.15460)
- [A1] **Jin Hyun Park**. *Representations Learnt by SGD and Adaptive Learning Rules: Conditions that Vary Sparsity and Selectivity in Neural Networks*. arXiv preprint, 2022. [arXiv:2201.11653](https://arxiv.org/abs/2201.11653)

RESEARCH EXPERIENCE

Graduate Research Assistant Aug 2022 – Present

Brain Networks Lab, Texas A&M University Advisor: Yoonsuck Choe

- Biologically inspired neural networks: incorporated visual-cortex lateral connectivity (recurrent activation, excitatory-inhibitory separation) into CNNs [A2] and analyzed saliency thresholds in neural codes [W1].
- Evolution of prediction: studied the evolutionary factors that give rise to predictive behavior in simulated agents [J1].
- Learning-based control: developed an AI-driven smart thermostat for floor-heating systems.

Research Assistant Jan 2022 – Jul 2022

Multimodal Language and Cognition Lab, Kyungpook National University, Daegu, Korea

- Research on classical NLP algorithms and large language models.
- Organized a reinforcement learning seminar series for lab members, with lecture notes and code samples.

INDUSTRY EXPERIENCE

Physical AI Ph.D. Fellow Feb 2026 – Present

Doosan Corporation, Seoul, Korea

Machine Learning Engineer Intern	May – Aug 2023; Jul – Aug 2025
Machine Learning Team, Tilda Corp., Seoul, Korea	
• 2025: Meta-heuristic and neural methods for vehicle routing, multi-agent path finding, and time-series forecasting. • 2023: Machine learning solutions based on a neural-network-guided genetic algorithm.	
Machine Learning Engineer Intern	Jul – Aug 2024
AI Service Part, Digital Innovation Team, Samsung Life Insurance, Seoul, Korea	
• Built an automatic PDF parsing pipeline and a retrieval-augmented (RAG) search engine for insurance documents and policy retrieval.	
Machine Learning Engineer Intern	May – Jul 2024
AI Prediction Tech Team, Data Science Lab, LG Uplus, Seoul, Korea	
• Ensemble and transformer models for identifying outbound roaming travelers. • Large-scale data generation, preprocessing, and visualization with SQL and Google BigQuery.	
Business Strategy Intern	Oct – Dec 2021
Commercial Vehicle Business Innovation Team, Hyundai Motor Company, Seoul, Korea	
• Short- to long-term business modeling for commercial vehicles, with a focus on FCEV and BEV.	

TEACHING AND SERVICE

Reviewer / Program Committee	
AAAI 2024, 2025, 2026; AAAI-AIA 2026; AAAI-Demo 2026; IEEE Transactions on Cognitive and Developmental Systems 2025; NeurIPS NeurReps Workshop 2026.	
Teaching Assistant	2022 – Present
CSCE 420/625 Artificial Intelligence, Texas A&M University.	
Seminar	2025
Seminar on large language models, Yonsei University.	

SELECTED PROJECTS

Depth- and Attention-Aware RGB Image Inpainting	2025
Course project, Computational Photography arXiv:2505.00735	
• Dual-encoder attention architecture fusing RGB and depth features; outperforms RGB-only baselines on several metrics, with Grad-CAM confirming improved spatial reasoning.	
PEPSE: Personal Photo Search Engine	2024
Course project, Information Storage and Retrieval	
• Semantic photo search combining caption generation, query embedding, and face recognition with pre-trained transformer models.	

FELLOWSHIPS, GRANTS, AND AWARDS

Physical AI Ph.D. Fellowship, Doosan Corporation	2026 – Present
Academic Excellence Grant, Texas A&M University	2025 – 2027
Travel Grants	
• Doosan Corporation, Consumer Electronics Show (CES), 2026 • Texas A&M University, NeurIPS, 2025 • Samsung Life Insurance and LG Uplus, internship travel, 2024 • Hyundai Mobis, Consumer Electronics Show (CES), 2024	
Barry Thomas Scholarship, University of Bristol	2018
Future Prize Winner Scholarship, University of Bristol	2017

SKILLS

Languages	Python, Java, C/C++, SQL
Frameworks	PyTorch, OpenCV, Google BigQuery
Areas	Deep learning, computational neuroscience, reinforcement learning, NLP and LLMs, retrieval-augmented generation, evolutionary and meta-heuristic optimization