

RESEARCH INTERESTS

Artificial Intelligence (AI), Trustworthy AI, and AI Alignment — My research interest focuses on designing trustworthy AI systems by understanding from theory to implementation and by considering practical applications in computer security, computer vision, natural language processing, robotics, and cyber-physical systems.

EDUCATION

University of Pennsylvania

Philadelphia, USA

Ph.D. in Computer and Information Science

2021

- Advisors: Insup Lee and Osbert Bastani
- Thesis: *Uncertainty Estimation Toward Safe AI*
- Committee: Kostas Daniilidis, Nikolai Matni, Edgar Dobriban, and Kilian Q. Weinberger

Seoul National University

Seoul, Korea

M.S. in Electrical and Computer Engineering

2012

- Advisor: Kyoung Mu Lee
- Thesis: *Abnormal Object Detection by Transformed-Canonical Scene Generation*

Seoul National University

Seoul, Korea

B.S. in Computer Science and Engineering

2010

- Thesis Advisor: Byoung-Tak Zhang
- Thesis: *Behavioral Intelligence for Crowd Avatar in 3D Virtual Worlds*

EMPLOYMENT

POSTECH

Pohang, Korea

Assistant Professor

Aug. 2023-Now

Georgia Institute of Technology

Atlanta, USA

Postdoctoral Researcher (Mentor: Taesoo Kim)

Sept. 2021-July 2023

Google Cloud AI

Sunnyvale, USA

Research Intern (Host: Kihyuk Sohn)

Summer 2020

Biointelligence Laboratory, Seoul National University

Seoul, Korea

Undergraduate Researcher

2008-2010

Republic of Korea Army

Korea

Military Service

2006-2008

- [1] J. Hwang, J. Park, H. Park, D. Kim, **S. Park**, and J. Ok, “Retrieval-augmented generation with estimation of source reliability”, in *Empirical Methods in Natural Language Processing (EMNLP)*, 2025.
- [2] K. Kim, Y. Choi, H. Kim, D. Kim, and **S. Park**, “Chronobias: A benchmark for evaluating time-conditional group bias in the time-sensitive knowledge of large language models”, in *Empirical Methods in Natural Language Processing (EMNLP Findings)*, 2025.
- [3] S. Moon, M. Lee, **S. Park**, and D. Kim, “Holistic unlearning benchmark: A multi-faceted evaluation for text-to-image diffusion model unlearning”, in *International Conference on Computer Vision (ICCV)*, Oct. 2025.
- [4] H. Wang, Z. Yang, **S. Park**, Y. Yang, S. Kim, W. Lunardi, M. Andreoni, T. Kim, and W. Lee, “SOUNDBOOST: Effective RCA and Attack Detection for UAV via Acoustic Side-Channel”, in *Proceedings of the 55th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)*, 2025.
- [5] M. Lee, K. Kim, T. Kim, and **S. Park**, “Selective Generation for Controllable Language Models”, in *Neural Information Processing Systems (NeurIPS)*, 2024.
- [6] S. Li, **S. Park**, I. Lee, and O. Bastani, “TRAQ: Trustworthy Retrieval Augmented Question Answering via Conformal Prediction”, in *Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*, 2024.
- [7] H. Park, J. Hwang, S. Mun, **S. Park**, and J. Ok, “MedBN: Robust Test Time Adaptation against Malicious Test Samples”, in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- [8] W. Si, **S. Park**, I. Lee, E. Dobriban, and O. Bastani, “PAC prediction sets under label shift”, in *The Twelfth International Conference on Learning Representations (ICLR)*, 2024.
- [9] W. Si, S. Li, **S. Park**, I. Lee, and O. Bastani, “Angelic Patches for Improving Third-Party Object Detector Performance”, in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.
- [10] **S. Park**, O. Bastani, and T. Kim, “ACon²: Adaptive Conformal Consensus for Provable Blockchain Oracles”, in *Proceedings of the 32nd USENIX Security Symposium (Security)*, 2023.
- [11] R. Kaur, K. Sridhar, **S. Park**, Y. Yang, S. Jha, A. Roy, O. Sokolsky, and I. Lee, “CODiT: Conformal out-of-distribution detection in time-series data for cyber-physical systems”, in *Proceedings of the 14th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS)*, 2023.
- [12] **S. Park**, X. Cheng, and T. Kim, “Unsafe’s Betrayal: Abusing Unsafe Rust in Binary Reverse Engineering via Machine Learning”, *arXiv preprint arXiv:2211.00111*, 2023.
- [13] **S. Park**, E. Dobriban, I. Lee, and O. Bastani, “PAC Prediction Sets for Meta-Learning”, in *Neural Information Processing Systems (NeurIPS)*, 2022.
- [14] S. Li, **S. Park**, X. Ji, I. Lee, and O. Bastani, “Towards PAC multi-object detection and tracking”, *arXiv preprint arXiv:2204.07482*, 2022.
- [15] S. Jang, **S. Park**, I. Lee, and O. Bastani, “Sequential covariate shift detection using classifier two-sample tests”, in *Proceedings of the 39th International Conference on Machine Learning (ICML)*, 2022.
- [16] R. Kaur, S. Jha, A. Roy, **S. Park**, E. Dobriban, O. Sokolsky, and I. Lee, “iDECODE: In-distribution equivariance for conformal out-of-distribution detection”, in *Association for the Advancement of Artificial Intelligence (AAAI)*, 2021.
- [17] **S. Park**, S. Li, I. Lee, and O. Bastani, “PAC confidence predictions for deep neural network classifiers”, in *International Conference on Learning Representations (ICLR)*, 2021.

- [18] **S. Park**, O. Bastani, J. Weimer, and I. Lee, “Calibrated prediction with covariate shift via unsupervised domain adaptation”, in *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2020.
- [19] **S. Park**, O. Bastani, N. Matni, and I. Lee, “PAC confidence sets for deep neural networks via calibrated prediction”, in *International Conference on Learning Representations (ICLR)*, 2020.
- [20] **S. Park**, R. Ivanov, J. Weimer, and I. Lee, “From verification to learning for defense against adversarial examples in neural networks”, *Korea Cyber-security Competition*, 2018.
- [21] **S. Park**, J. Weimer, and I. Lee, “Resilient linear classification: An approach to deal with attacks on training data”, in *International Conference on Cyber-Physical Systems (ICCPS)*, 2017.
- [22] J. Oh, T. M. Howard, M. R. Walter, D. Barber, M. Zhu, **S. Park**, A. Suppe, L. Navarro-Serment, F. Duvallet, A. Boularias, *et al.*, “Integrated intelligence for human-robot teams”, in *International Symposium on Experimental Robotics (ISER)*, 2016.
- [23] **S. Park**, W. Kim, and K. M. Lee, “Abnormal object detection by canonical scene-based contextual model”, in *European Conference on Computer Vision (ECCV)*, 2012.

SCHOLARSHIPS AND AWARDS

• DARPA AIxCC Winner as Team Atlanta (\$4M Team Prize)	2025
• Best Paper Finalist from CKAIA)	2025
• Bang Seung-Yang Graduate Fellowship from POSTECH CSE (awardee: Jaewoo Jeong)	2025
• POSTECH GSAI BK21 Best Paper Award	2025
• NeurIPS’24 Spotlight Paper (top 2.08%)	2024
• DARPA AIxCC Finalists as Team Atlanta (\$2M Team Prize)	2024
• NeurIPS’23 Outstanding Reviewer Award	2023
• ICML’23 TEACH Workshop Best Paper Award	2023
• ICCPS’23 Best Paper Award finalist	2023
• NeurIPS’21 Outstanding Reviewer Award (top 8% of reviewers)	2021
• Korea cyber-security paper competition Best Paper Award (\$4,500)	2018
• PhD fellowship at University of Pennsylvania	2013-2021
• Distinguished MS Dissertation Award at Seoul National University	2012
• Academic Performance Scholarship	2009
• National Science and Engineering Undergraduate Scholarship	2003–2008

SERVICE

- **Area Chair**
NeurIPS’24-25, ICML’25, ICLR’26
- **Reviewer**
NeurIPS’21-23, ICML’21-23, ICLR’22-24, AAI’25, Journal of the Royal Statistical Society: Series B
- **External Reviewer**
S&P’21, S&P’22, Security’22, Security’23, Security’24, NDSS’24

TEACHING

- **Instructor** at POSTECH ML (CSED515) Fall 2025
- **Instructor** at POSTECH Trustworthy ML (AIGS703L / CSED703L) Fall 2023, Fall 2024, Spring 2025
- **Instructor** at POSTECH Discrete Mathematics (CSED261) Spring 2024
- **Teaching Assistant** at University of Pennsylvania Machine Perception (CIS580) Spring 2015
- **Teaching Assistant** at University of Pennsylvania Computer Vision and Computational Photography (CIS581) Fall 2014
- **Teaching Assistant** at Seoul National University Linear Algebra for Electrical Systems Fall 2010
- **Instructor** at Seoul National University 1st Free Computer Education for Gwanak-gu Community Youth Feb. 2008

TALKS

- **AI Alignment**
Nxt AI Nov. 2025
KAIST GSIS Nov. 2025
- **AI Red Teaming and Agentic AI Security**
OSSTEM Nov. 2025
Samsung SDS Nov. 2025
WITHCON Nov. 2025
- **AI System for Discovering and Patching Vulnerable Code by Team Atlanta**
POSCO DX Oct. 2025
- **Introduction to Trustworthy LLMs**
KISC (한국통신학회 단기강좌) July. 2025
- **Trustworthy LLMs**
Best of the Best (BoB) July. 2025
- **Selective Generation Towards Trustworthy LLMs**
NYU Frontier Lab July. 2025
KIISC AI Security Group (정보보호학회 AI보안 연구회) July. 2025
- **Toward Trustworthy Large Language Models**
PKNU AI Dec. 2024
POSTECH AI Day Dec. 2024
- **Rethinking and Harnessing Trustworthiness of Generative AI for Security**
Samsung Security Tech Forum (SSTF) – *Invited Talk* Sep. 2024
- **Trustworthy Military-AI: AI Controllability**
REAIM Sep. 2024
- **Trend on Trustworthy Language Models**
National Statistics Development Forum Sep. 2024
- **Trustworthy AI: A Compositional Perspective**
POSTECH AI/CSE April 2024
- **Conformal Prediction for Trustworthy AI**

Korean AI Association Winter School	Feb. 2024
• Uncertainty Learning for Trustworthy and Secure AI	
POSTECH AI/CSE	Mar. 2023
KAIST EE	April 2023
SNU CSE	April 2023
Korea University CSE	July 2023
SNU IPAI	July 2023
SNU Frontier Summer School	Aug. 2023
UNIST IB	Oct. 2023
KAIST EE	Jan. 2024
CAU AI	May 2024
Korea GSS	June 2024
• PAC Prediction Sets for AI Safety	
ICML Workshop DFUQ 2022 – <i>Invited Talk</i>	Jul. 2022
• Uncertainty Quantification via PAC Prediction Sets	
DGIST	Dec. 2021
• From Verification to Learning for Defense against Adversarial Examples in Neural Networks	
KAIST GSIS	Aug. 2018
Hanyang University	Aug. 2018
KIISC	Aug. 2018