TAERO KIM (김태로)

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Graduate Student @ Yonsei University

EDUCATION

Yonsei University, Korea *Mar. 2023 -*
Integrated Ph.D. in the Department of Statistics and Data Science
– Advisor: Kyungwoo Song

University of Seoul, Korea *Mar. 2022 - Feb. 2023 (Dropout)*
M.S. in the Department of Artificial Intelligence
– Advisor: Kyungwoo Song

University of Seoul, Korea *Mar. 2016 - Feb. 2022*
B.S. in the Department of Physics
B.S. in the Department of Nano Semiconductor Physics
– Advisor: Moonsup Han

EXPERIENCE

Visiting Student *Jan. 2025 - Jun. 2025*
Dispatch Training and Applied Project in University of Toronto
– Applied Project: MLM: Multi-linguistic LoRA Merging (with LG Electronics, Toronto AI Lab)

Visiting Researcher *Jun. 2024 - Jul. 2024*
Research Collaboration in the Australian National University
– with Prof. Lexing Xie

Statistical Consultation Assistant *Mar. 2023 - Aug. 2023*
Dept. of Statistics and Data Science, Yonsei University

Undergraduate Research Assistant – Advisor: Kyungwoo Song *Jun. 2021 - Feb. 2022*
Machine Learning and Artificial Intelligence Lab, Depts. of Artificial Intelligence, Univ. of Seoul
–Research: Domain Generalization, Invariant Representation Learning, Distributionally Robust Optimization, Sharpness-aware Minimization, Causal Inference

Solid Physics Summer School Internship – Advisor: Youngjun Chang *Jul. 2020 - Aug. 2020*
Smart Film Lab, Dept. of Physics, Univ. of Seoul
– Research: MBE-Grown TMDC Monolayers on h-BN & Graphene, Atomic Force Microscopy

Undergraduate Research Assistant – Advisor: Moonsup Han *Jun. 2019 - Mar. 2021*
Nano Structure Application Lab, Dept. of Physics, Univ. of Seoul
– Research: Photolithography Setup & MoS_2 I-V Measurement

PUBLICATIONS & PREPRINTS

Peer-Reviewed Papers

[1] Jung Lee*, Taero Kim*, Nikhil Verma, "MLM: Multi-linguistic LoRA Merging", Efficient Reasoning Workshop at Conference on Neural Information Processing Systems (NeurIPS), 2025.

[2] Joonseong Kang, Soojeong Lee, Sumin Park, Subeen Park, Taero Kim, Jihee Kim, Ryunyi Lee, Kyungwoo Song, "Adaptive Task Vectors for Large Language Models", Mechanistic Interpretability Workshop at Conference on Neural Information Processing Systems (NeurIPS), 2025.

[3] Hoyoon Byun, Gyeongdeok Seo, Joonseong Kang, Taero Kim, Jihee Kim, Kyungwoo Song, "CCL: Causal-aware In-context Learning for Out-of-distribution generalization", Conference on Neural Information Processing Systems (NeurIPS), 2025.

[4] Jinho Kang, Hoyoon Byun, Taero Kim, Jiyoung Jung, Kyungwoo Song, "Multi-Query Frequency Prompting for Physiological Signal Domain Adaptation", Knowledge-Based Systems, 2025.

[5] Taero Kim, Seonggyun Lee, Joonseong Kang, Youngjun Choi, Wonsang Yun, Nicole Hee-Yeon Kim, Ziyu Chen, Lexing Xie, Kyungwoo Song, "IMC: A Benchmark for Invariant Learning under Multiple Causes", The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2025 Workshop. Domain Generalization: Evolution, Breakthroughs and Future Horizon [Oral, Best Paper Award]

[6] Taero Kim, Subeen Park, SungJun Lim, Yonghan Jung, Krikamol Muandet, and Kyungwoo Song, "Sufficient Invariant Learning for Distribution Shift", The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2025.

[7] Sungjun Lim*, Taero Kim*, Hyunjung Lee*, Yewon Kim, Minhoi Park, Minseung Kim, Kyuhyung Kim, Kyungwoo Song, "Robust Optimization for PPG-based Blood Pressure Estimation", Biomedical Signal Processing and Control, 2025.

[8] Taero Kim*, Changdae Oh*, Hyeji Hwang*, Eunkyeong Lee, Yewon Kim, Yunjeong Choi, Sungjin Kim, Hosik Choi, Kyungwoo Song, "TC-BERT: Large-scale Language Model for Korean Technology Documents", The Journal of Supercomputing, 2024.

[9] Taero Kim, Hyeonjeong Lee, Minseong Kim, Kwang-Yong Kim, Kyu Hyung Kim, Kyungwoo Song, "GloGen: PPG prompts for few-shot transfer learning in blood pressure estimation", Computers in Biology and Medicine, 2024.

[10] Jeyoon Yeom, Taero Kim, Rakwoo Chang, Kyungwoo Song, "Structural and Positional Ensembled Encoding for Graph Transformer", Pattern Recognition Letters, 2024.

[11] Jinho Kang, Taero Kim, Yewon Kim, Changdae Oh, Jiyoung Jung, Rakwoo Chang, Kyungwoo Song, "Bibimbap : Pre-trained models ensemble for Domain Generalization", Pattern Recognition, 2024.

[12] Changdae Oh, Heeji Won, Junhyuk So, Taero Kim, Yewon Kim, Hosik Choi, Kyungwoo Song, "Learning Fair Representation via Distributional Contrastive Disentanglement", Conference on Knowledge Discovery and Data Mining (KDD), 2022.

Under Review

[1] Taero Kim, Hoyoon Byun, Youngjun Choi, Sungrae Park, Kyungwoo Song, "MIDUS: Memory-Infused Depth Up-Scaling"

[2] Hoyoon Byun, Youngjun Choi, Taero Kim, Sungrae Park, Kyungwoo Song, "Bounded Hyperbolic Tangent: A Stable and Efficient Alternative to Pre-Layer Normalization in Large Language Models"

* denotes equal contribution.

PRESENTATIONS

"Sufficient Invariant Learning for Distribution Shift" (Oral), Research presentation in K-Data Science Conference, 2023

"Sufficient Invariant Learning for Distribution Shift" (Oral), BK Student Seminar in Dept. of Statistics and Data Science, Yonsei University, 2023

"Sufficient Invariant Learning for Distribution Shift" (Oral), Student Presentation in Winter BK Academic Conference, Dept. of Statistics and Data Science, Yonsei University, 2023

"Sufficient Invariant Learning for Distribution Shift"(Poster), Basic Research Exchange Meeting, 2023
"Flatness Enables Sufficient Invariant Learning in Distribution Shift"(Poster), Winter Academic Paper Presentation Conference in The Korean Statistical Society, 2023
"Improving Out-of-distribution Performance Using Domain Generalization Methods" (Oral), Workshop in Graduate School of Chemical Safety Management, 2022

ACADEMIC SERVICE

Workshop Organizer *Apr. 2026 - July. 2026*
ICML 2026 Mechanistic Interpretability Workshop
– Organized local logistics and social.

TEACHING ASSISTANT

Generative Models
Teaching Assistant, Yonsei University *Sep, 2023 - Dec, 2023*
Introduction to Statistical Methodology
Teaching Assistant, University of Seoul, Korea *May, 2022 - Jun, 2022*

AWARDS & SCHOLARSHIPS

Best Paper Award. "IMC: A Benchmark for Invariant Learning under Multiple Causes", The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2025 Workshop. Domain Generalization: Evolution, Breakthroughs and Future Horizon. (Cash Prize: USD 750)
AI Convergence Progam at University of Toronto. Institute for Information & communication Technology Planning & evaluation and Sogang University. 2024. (Scholarship: USD 41K)
National Research Foundation of Korea Chairman's Award. Research presentation in K-Data Science Conference, 2023.
1st Prize. Student Presentation in Winter BK Academic Conference, Dept. of Statistics and Data Science, Yonsei University, 2023.
Academic Award, University of Seoul, 2020.
Excellent Prize. Undergraduate Work Presentation in The Korean Physical Society, 2020.
2nd Prize. C++ Programming Computational Physics Winter School, University of Seoul, 2017.

PROJECT

Application Methodology of AI Technologies for Early Detection and Improved Root Cause Consistency in Safety and Quality Issues
funded by Hyundai Motor, Korea *Oct. 2025 - Present*

Developing Training Methods for LLMs that Adapt Well to New Knowledge
funded by Upstage, Korea *Mar. 2025 - Oct. 2025*

Global Collaborative Research for Advancing Regulatory Science and Technology in Safety and Efficacy Evaluation of Biohealth Products
funded by Ministry of Food and Drug Safety, Korea *Apr. 2024 - Feb. 2025*

Stabilizing AI-based Blood Pressure Estimation with Addressing Data Imbalance
funded by Electronics and Telecommunications Research Institute, Korea *Mar. 2023 - Dec. 2023*

Deep Learning Based Material Design

funded by University of Seoul, Korea *Dec. 2022 - Feb. 2023*

Epidemiological Relevance Evaluation Technology for Vaccination Reactions
funded by Ministry of Food and Drug Safety, Korea *Mar. 2022 - Feb. 2025*

Explainable AI for Blood Pressure Estimation
funded by Electronics and Telecommunications Research Institute, Korea *Jun. 2022 - Nov. 2022*

Financial and Telecommunication Data Analysis
funded by National Police Agency, Korea *Mar. 2022 - May. 2022*

Trustworthy AI
funded by Telecommunications Technology Association in Korea *Jul. 2021 - Dec. 2021*

Keyword extraction for technology commercialization documents
funded by Korea Institute of Science and Technology Information *Jun. 2021 - Oct. 2021*

PATENTS

Changdae Oh, Heeji Won, Junhyuk So, Taero Kim, Hosik Choi, and Hyungwoo Song, "Device and method for training artificial intelligence model", 10-2022-0049146, 2022, Patent Pending.

ADDITIONAL INFORMATION

Military Service *Apr. 2017 - Dec. 2018*
Served and Discharged as Sergeant