Changhun Kim

Machine Learning Researcher, AITRICS 13F, 218, Teheran-ro, Gangnam-gu, Seoul, 06221, South Korea
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Research Interests

Out-of-Distribution Generalization, Deep Generative Models, Statistical Learning Theory

Education

Korea Advanced Institute of Science and Technology (KAIST) Daejeon, South Korea
M.S. in Artificial Intelligence (Advisor: Prof. Eunho Yang) Mar. 2022–Feb. 2024
- GPA: 4.25/4.3, 4.00/4.0, 99.5% (Department Salutatorian, Top 0.7% of all Departments)

B.S. in Computer Science and Mathematics (Double Major) Mar. 2017–Feb. 2022
- GPA: 3.92/4.3, 3.81/4.0, 96.2% (Magna Cum Laude, Top 9% in the Department)

Publications

M: Manuscript, C: Conference, W: Workshop, *: Equal Contribution

[M3] **Changhun Kim***, Hyeongwon Jang*, Eunho Yang. "**Towards Robust and Efficient Feature Importance Estimation for Irregular Multivariate Time Series Explanation**." *In Preparation*.

[M2] **Changhun Kim**, Joohyung Lee, Kwanhyung Lee, Donghwee Yoon, Eunho Yang. "**Meta-Learning for Domain Generalization on Irregular Time Series**." *In Preparation*.

[M1] Wooseok Han*, Minki Kang*, **Changhun Kim**, Eunho Yang. "**Stable-TTS: Stable Speaker-Adaptive Text-to-Speech Synthesis via Prosody Prompting**." *Under Review at IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**)*, 2025.

[C2] Hajin Shim*, **Changhun Kim***, Eunho Yang. "**CloudFixer: Test-Time Adaptation for 3D Point Clouds via Diffusion-Guided Geometric Transformation**." *European Conference on Computer Vision (**ECCV**)*, 2024.

[C1] **Changhun Kim**, Joonhyung Park, Hajin Shim, Eunho Yang. "**SGEM: Test-Time Adaptation for Automatic Speech Recognition via Sequential-Level Generalized Entropy Minimization**." *Conference of the International Speech Communication Association (**INTERSPEECH**)*, 2023, **Oral Presentation**.

[W1] **Changhun Kim***, Taewon Kim*, Seungyeon Woo, June Yong Yang, Eunho Yang. "**AdapTable: Test-Time Adaptation for Tabular Data via Shift-Aware Uncertainty Calibrator and Label Distribution Handler**." *NeurIPS Workshop on Table Representation Learning (**NeurIPSW-TRL**)*, 2024.

Research Experience

AITRICS Seoul, South Korea
Machine Learning Researcher (Advisor: Prof. Eunho Yang) Nov. 2023–Present
- Enhance the generalizability, robustness, and explainability of early prediction models for critical clinical outcomes.

KAIST Machine Learning and Intelligence Lab Daejeon, South Korea
Master's Student Researcher (Advisor: Prof. Eunho Yang) Mar. 2022–Feb. 2024
- Explored modality-specific test-time adaptation strategies for diverse tasks including 3D point cloud classification, zero-shot transfer of vision-language models, automatic speech recognition, tabular learning, and time series classification.

Undergraduate Researcher (Advisor: Prof. Eunho Yang) Jun. 2021–Feb. 2022
- Investigated a style matching denoiser for automatic speech recognition.

KAIST Vehicular Intelligence Lab Daejeon, South Korea
Undergraduate Researcher (Advisor: Prof. Dongsoo Har) Oct. 2019–Aug. 2020
- Researched deep reinforcement learning algorithm and developed a block coding system to automatically generate rule-based and deep learning codes for the International Robot Olympiad AI Soccer Challenge.

Work Experience

KAIST Applied Artificial Intelligence Lab Daejeon, South Korea
Developer (Advisor: Prof. Il-Chul Moon) Sept. 2021–Jan. 2022
- Built automated scraping systems to extract and store financial data, stock prices, and news articles in databases.

DeepNatural Seoul, South Korea
Machine Learning Engineer (Advisor: Anson Park) Sept. 2020–Feb. 2021
- Constructed machine learning systems for speaker verification/diarization, Duchenne smile classification, smart cushion sitting posture prediction, and medical product recommendation.

Netmarble Seoul, South Korea
Data Engineer (Advisor: Sungwoo Lee) Jun. 2019–Aug. 2019
- Developed log-based real-time OLAP service for the Seven Knights mobile game.

Patents

[P1] Eunho Yang, **Changhun Kim**, Joonhyung Park, Hajin Shim. "**Test-Time Adaptation for Automatic Speech Recognition via Sequential-Level Generalized Entropy Minimization**." *US Patent Application No.* 18/594,442, Issued 2024. *KR Patent Application No.* 10-2024-0006413 and 10-2024-0023266, Issued 2024.

Honors and Awards

Dongwon Full Masters Scholarship, Dongwon Group — Spring 2022–Fall 2023
Silver Prize, Korean Undergraduate Mathematics Competition, Korean Mathematics Society — Jan. 2022
National Full Undergraduate Scholarship, Korea Student Aid Foundation — Spring 2017–Fall 2021
KAIST Convergence AMP Scholarship, KAIST School of Computing — Mar. 2019

Professional Activities

Teaching Experience

- **Teaching Assistant**, Tabular Learning, Hanwha Ocean Capstone Project — Spring 2023
- **Teaching Assistant**, AI Soccer Challenge, Bokja Girls' High School AI Education Program — Fall 2020

Mentoring Experience

- **Hyeongwon Jang**, Master's Student Researcher, KAIST AI — Oct. 2024–Present
- **Wooseok Han**, NLP/Speech Engineer, AITRICS — Mar. 2024–Nov. 2024
- **Taewon Kim**, Undergraduate Researcher, KAIST EE — Mar. 2023–Nov. 2023
- **Sungwoo Cho**, Undergraduate Researcher, KAIST EE — Sept. 2022–Apr. 2023

Academic Service

- **Journal Reviewer:** TMLR 2024
- **Conference Reviewer:** NeurIPS 2024, ICLR 2025, ICASSP 2025, LoG 2024
- **Workshop Reviewer:** NeurIPSW-MATH-AI 2024, NeurIPSW-TSALM 2024, ECCVW-WiCV 2024

Skills

Programming Languages: Python, C/C++, Java, JavaScript, SQL, Bash, LaTeX
Libraries/Frameworks: PyTorch, TensorFlow, Docker, Node.js, Android Studio
Language Proficiency: Native in Korean, Advanced in English