Changhun Kim

Contact Information

Position: M.S. Student @ KAIST AI, Machine Learning Researcher @ AITRICS
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Links: Homepage, Google Scholar, GitHub, LinkedIn, X

Research Interests

My research interests lie in developing scalable and provable machine learning algorithms for various applications. Currently, I am particularly intrigued by the following topics:

Generalizable Deep Learning: Test-Time Adaptation, Meta-Learning, Zero-Shot Learning
Generative Models: Diffusion Models, Generative Adversarial Networks
Bayesian Machine Learning: Bayesian Deep Learning, Bayesian Nonparametrics

Education

Korea Advanced Institute of Science and Technology (KAIST) Daejeon, South Korea

M.S. in Artificial Intelligence Mar. 2022 – Present

- Thesis: Test-Time Adaptation for Automatic Speech Recognition via Sequential-Level Generalized Entropy Minimization
- Advisor: Eunho Yang
- GPA: 4.25/4.3, 4.0/4.0, 99.5%

B.S. in Computer Science and Mathematics (Double Major) Mar. 2017 – Feb. 2022

- Magna Cum Laude with Honors in Engineering
- GPA: 3.92/4.3, 3.81/4.0, 96.2%

Publications

*: Equal contribution

CloudFixer: Test-Time Adaptation for 3D Point Clouds via Diffusion-Guided Domain Translation

Hajin Shim*, **Changhun Kim*** and Eunho Yang
Under Review

SGEM: Test-Time Adaptation for Automatic Speech Recognition via Sequential-Level Generalized Entropy Minimization [paper][code]

Changhun Kim, Joonhyung Park, Hajin Shim and Eunho Yang
Conference of the International Speech Communication Association (INTERSPEECH), 2023
Oral Presentation, 348/2293=15.18%

Research Experience

Medical AI Division, AITRICS Seoul, South Korea

Machine Learning Researcher Nov. 2023 – Present

- Conduct research on test-time adaptation for time series analysis, with a particular emphasis on biomedical signal analysis, in collaboration with Professor Eunho Yang.

Machine Learning and Intelligence Laboratory, KAIST Daejeon, South Korea

Master's Student Mar. 2022 – Present

- Explore modality-specific test-time adaptation strategies in 3D point cloud classification, zero-shot transfer of vision-language models, automatic speech recognition, and tabular classification under Professor Eunho Yang.

Research Intern Jun. 2021 – Feb. 2022

- Investigate a style matching denoiser for automatic speech recognition under the supervision of Professor Eunho Yang.

Work Experience

Vehicular Intelligence Laboratory, KAIST — Daejeon, South Korea

Research Intern — Oct. 2019 – Aug. 2020

- Research a deep reinforcement learning system for AI soccer, and develop rule-based and deep learning AI soccer code generators under the guidance of Professor Dongsoo Har.

MLOps Squad, DeepNatural AI — Seoul, South Korea

Machine Learning Engineer — Sep. 2020 – Feb. 2021

- Construct diverse machine learning systems, including speaker verification and diarization framework, Duchenne smile classifier, and medical product recommender system.

Big Data Center, Netmarble — Seoul, South Korea

Data Engineer — Jun. 2019 – Aug. 2019

- Develop log-based real-time OLAP service for Seven Knights mobile game.

Honors and Awards

Best MLILAB Member for 2022 – 2023, KAIST	Jul. 2023
Dongwon Scholarship (Full M.S.), KAIST	2022 – 2023
Silver Prize, Korean Undergraduate Mathematics Competition	Jan. 2022
Overseas Exchange Scholarship, Mirae Asset	Dec. 2019
Representative of Student Exchange Ambassador, KAIST	Nov. 2019
Honor Student, College of Engineering, KAIST	Sep. 2019
Convergence AMP Scholarship, KAIST	Mar. 2019
Winner, Science Quiz, KAIST-POSTECH Science War	Sep. 2018
Participation Prize, Urban Design Competition, CEE, KAIST	Dec. 2017
National Scholarship (Full B.S.), KAIST	2017 – 2021

Skills

Programming Skills

Advanced: C/C++, Java, Python, SQL, PyTorch
Moderate: HTML/CSS/JavaScript, TensorFlow
Novice: Android Studio, Node.js

Languages

Advanced in **English** and Native in **Korean**