# Changhun Kim

CONTACT Information Position: 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 – Feb. 2024

- 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% (Department Salutatorian, Top 0.7% of all Department)

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% (Top 9% in the Department)

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 large language model and test-time adaptation for time series analysis, with a particular emphasis on biomedical signal analysis, in collaboration with Prof. Eunho Yang.

Machine Learning and Intelligence Laboratory, KAIST

Daejeon, South Korea

Master's Student

Mar. 2022 - Feb. 2024

Explore modality-specific test-time adaptation strategies on diverse tasks, such as 3D point cloud classification, zero-shot transfer of vision-language models, automatic speech recognition, and tabular classification under Prof. Eunho Yang.

Research Intern

Jun. 2021 – Feb. 2022

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

## 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 Prof. Dongsoo Har.

## Work Experience

#### 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
Magna Cum Laude, College of Engineering, KAIST	Feb. 2022
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**

Programming Languages: C/C++, Java, Python, SQL

Libraries/Frameworks: PyTorch, TensorFlow

## Languages

Advanced in English and Native in Korean