

JAEKYEOM KIM

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RESEARCH INTERESTS

LLM and VLM-based agents for decision-making in real-world tasks by leveraging large-scale demonstration datasets and prior knowledge in foundation models.

EDUCATION

Seoul National University

Mar. 2018 - Aug. 2023

Integrated MS/PhD in Computer Science and Engineering

Vision & Learning Lab (Advisor: Prof. Gunhee Kim and Prof. Hyun Oh Song)

Dissertation: [Generalizable Agents with Improved Abstractions and Transfer](#)

Korea Advanced Institute of Science and Technology

Feb. 2010 - Jun. 2017

Bachelor of Science in Computer Science

GPA (Overall): 4.06/4.30

Graduated *summa cum laude*

GPA (Major): 4.21/4.30

WORK EXPERIENCE

LG AI Research, Ann Arbor

Aug. 2023 - Present

Researcher

- Working on LLM-based agents for decision making in real-world tasks, exploiting demonstration datasets and prior knowledge in LLMs
- Manager: Prof. Honglak Lee

ESTsoft, Seoul (Alternative Military Service)

Apr. 2013 - May 2016

Senior Software Engineer

- Developed the dual-engine web browser based on Chromium, a large-scale open source project that powers Google Chrome and more

Google, Seoul

Jun. 2012 - Sep. 2012

Software Engineering Intern

- Worked on processing raw text data to generate formalized entries and reconciling them with existing entries, as part of the Knowledge Graph project

PUBLICATIONS

(*equal contribution)

Small Language Models Need Strong Verifiers to Self-Correct Reasoning

Yunxiang Zhang, Muhammad Khalifa, Lajanugen Logeswaran, **Jaekyeom Kim**, Moontae Lee, Honglak Lee, Lu Wang

- **arXiv 2024**

AutoGuide: Automated Generation and Selection of State-Aware Guidelines for Large Language Model Agents

Yao Fu, Dong-Ki Kim, **Jaekyeom Kim**, Sungryull Sohn, Lajanugen Logeswaran, Kyunghoon Bae, Honglak Lee

- **arXiv 2024**

Constrained GPI for Zero-Shot Transfer in Reinforcement Learning

Jaekyeom Kim, Seohong Park, Gunhee Kim

· **NeurIPS 2022**

Lipschitz-constrained Unsupervised Skill Discovery

Seohong Park, Jongwook Choi*, **Jaekyeom Kim***, Honglak Lee, Gunhee Kim

· **ICLR 2022**

Time Discretization-Invariant Safe Action Repetition for Policy Gradient Methods

Seohong Park, **Jaekyeom Kim**, Gunhee Kim

· **NeurIPS 2021**

Unsupervised Skill Discovery with Bottleneck Option Learning

Jaekyeom Kim*, Seohong Park*, Gunhee Kim

· **ICML 2021**

Drop-Bottleneck: Learning Discrete Compressed Representation for Noise-Robust Exploration

Jaekyeom Kim, Minjung Kim, Dongyeon Woo, Gunhee Kim

· **ICLR 2021**

Model-Agnostic Boundary-Adversarial Sampling for Test-Time Generalization in Few-Shot Learning

Jaekyeom Kim, Hyungseok Kim, Gunhee Kim

· **ECCV 2020 (Oral: 104/5025 \approx 2%)**

EMI: Exploration with Mutual Information

Hyungseok Kim*, **Jaekyeom Kim***, Yeonwoo Jeong, Sergey Levine, Hyun Oh Song

· **ICML 2019 (Long talk: 158/3424 \approx 4.6%)**

HONORS & AWARDS

Best PhD Dissertation Award

Dept. of Computer Science and Engineering, Seoul National University

Aug. 2023

Star Student Researcher Award

Brain Korea (BK21) FOUR Intelligence Computing, Seoul National University

Feb. 2023

Youlchon AI Star Fellowship

Youlchon Foundation

Jul. 2022

Naver PhD Fellowship

Naver

Dec. 2021

Google PhD Fellowship

Google

Sep. 2021

· Area: Machine Learning

Samsung Humantech Paper Award*Feb. 2021**Samsung Electronics*

- Silver Prize in Signal Processing, award for research work

Qualcomm Innovation Fellowship Korea*Dec. 2020**Qualcomm AI Research*

- Award for research work

On-Dream Outstanding Scholar Award*Dec. 2020**Hyundai Motor Chung Mong-Koo Foundation***On-Dream Future Talent Graduate Scholarship***Jul. 2020 - Jul. 2021**Hyundai Motor Chung Mong-Koo Foundation*

- Full-tuition and additional scholarships for graduate study

Kwanjeong Domestic Scholarship*Apr. 2018 - Mar. 2020**Kwanjeong Educational Foundation*

- Full-tuition and additional scholarships for 2 years

Summa Cum Laude Honor*Feb. 2018**Korea Advanced Institute of Science and Technology***National Presidential Science Scholarship***Feb. 2010 - Jun. 2017**Korea Student Aid Foundation*

- Full-tuition and additional scholarships for undergraduate study

KAIST Convergence AMP Scholarship*Oct. 2016**Korea Advanced Institute of Science and Technology*

- Merit-based scholarship awarded to 5 recipients

ACADEMIC ACTIVITIES

Conference Reviewer

- ICML (2021, 2022, 2023, 2024), NeurIPS (2021, 2022, 2023, 2024), ICLR (2022, 2023, 2024)

Teaching Assistant at Seoul National University

- Probabilistic Graphical Models (M1522.001300), Spring, 2022
- Statistical Foundations for A.I. and Machine Learning (M2480.000500), Fall, 2021
- Theory and Lab of IoT, AI, and Big Data (M2177.004900), Spring, 2021
- Probabilistic Graphical Models (M1522.001300), Spring, 2020
- Introduction to Deep Learning (M2177.004300), Spring, 2019
- Engineering Mathematics 2 (033.015), Fall, 2018
- Introduction to Deep Learning (M2177.004300), Spring, 2018