

JAEKYEOM KIM

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RESEARCH INTERESTS

LLM and multimodal agents for decision-making in challenging, real-world tasks by leveraging large-scale data and knowledge in foundation models.

WORK EXPERIENCE

LG AI Research, Ann Arbor
Researcher

Aug. 2023 - Present

- Working on LLM and multimodal agents for decision making in challenging, real-world tasks
- Manager: Prof. Honglak Lee

ESTsoft, Seoul (Alternative Military Service)
Senior Software Engineer

Apr. 2013 - May 2016

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

Google, Seoul
Software Engineering Intern

Jun. 2012 - Sep. 2012

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

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](#)

Committee: Profs. Sungjoo Yoo, Gunhee Kim, Hyun Oh Song, Joonseok Lee, and Kimin Lee

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

PUBLICATIONS

(*equal contribution)

1. Automated Generation and Selection of Context-Aware Guidelines for Large Language Model Agents
Yao Fu*, Dong-Ki Kim*, **Jaekyeom Kim**, Sungryull Sohn, Lajanugen Logeswaran, Kyunghoon Bae, Honglak Lee
NeurIPS 2024 (to appear in proceedings in Dec. 2024)
Also at ICML 2024 Workshop on LLMs and Cognition ([Accepted Papers](#))
2. Auto-Intent: Automated Intent Discovery and Self-Exploration for Large Language Model Web Agents
Jaekyeom Kim, Dong-Ki Kim, Lajanugen Logeswaran, Sungryull Sohn, Honglak Lee
EMNLP 2024 Findings (to appear in proceedings in Nov. 2024)

3. SkillAct: Using Skill Abstractions Improves LLM Agents
Anthony Zhe Liu, Jongwook Choi, Sungryull Sohn, Yao Fu, **Jaekyeom Kim**, Dong-Ki Kim, Xinhe Wang, Jaewon Yoo, Honglak Lee
ICML 2024 Workshop on LLMs and Cognition ([Accepted Papers](#))
4. Small Language Models Need Strong Verifiers to Self-Correct Reasoning
Yunxiang Zhang, Muhammad Khalifa, Lajanugen Logeswaran, **Jaekyeom Kim**, Moontae Lee, Honglak Lee, Lu Wang
ACL 2024 Findings ([Proceeding](#))
5. Constrained GPI for Zero-Shot Transfer in Reinforcement Learning
Jaekyeom Kim, Seohong Park, Gunhee Kim
NeurIPS 2022 ([Proceeding](#))
6. Lipschitz-constrained Unsupervised Skill Discovery
Seohong Park, Jongwook Choi*, **Jaekyeom Kim***, Honglak Lee, Gunhee Kim
ICLR 2022 ([Proceeding](#))
7. Time Discretization-Invariant Safe Action Repetition for Policy Gradient Methods
Seohong Park, **Jaekyeom Kim**, Gunhee Kim
NeurIPS 2021 ([Proceeding](#))
8. Unsupervised Skill Discovery with Bottleneck Option Learning
Jaekyeom Kim*, Seohong Park*, Gunhee Kim
ICML 2021 ([Proceeding](#))
9. Drop-Bottleneck: Learning Discrete Compressed Representation for Noise-Robust Exploration
Jaekyeom Kim, Minjung Kim, Dongyeon Woo, Gunhee Kim
ICLR 2021 ([Proceeding](#))
10. Model-Agnostic Boundary-Adversarial Sampling for Test-Time Generalization in Few-Shot Learning
Jaekyeom Kim, Hyoungeok Kim, Gunhee Kim
ECCV 2020 (Oral: 104/5025 \approx 2%) ([Proceeding](#))
11. EMI: Exploration with Mutual Information
Hyoungeok Kim*, **Jaekyeom Kim***, Yeonwoo Jeong, Sergey Levine, Hyun Oh Song
ICML 2019 (Long talk: 158/3424 \approx 4.6%) ([Proceeding](#))

HONORS & AWARDS

Best PhD Dissertation Award

Aug. 2023

Dept. of Computer Science and Engineering, Seoul National University

Star Student Researcher Award

Feb. 2023

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

Youlchon AI Star Fellowship *Jul. 2022*
Youlchon Foundation

Naver PhD Fellowship *Dec. 2021*
Naver

Google PhD Fellowship *Sep. 2021*
Google

- 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 SERVICE AND ACTIVITIES

Conference Reviewer

- ICML (2021, 2022, 2023, 2024)
- NeurIPS (2021, 2022, 2023, 2024)
- ICLR (2022, 2023, 2024, 2025)
- Workshops: NeurIPS Behavioral ML (2024)

Teaching Assistant

- 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