

# JAEKYEOM KIM

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## RESEARCH INTERESTS

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Building capable AI agents for decision-making in challenging, real-world tasks, with language and multimodal models and reinforcement learning.

## WORK EXPERIENCE

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### LG Management Development Institute Co., Ltd

*Aug. 2023 - Present*

*Postdoctoral Researcher*

- Working on language and multimodal agents for decision making in challenging, real-world tasks
- 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

## EDUCATION

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### Seoul National University

*Mar. 2018 - Aug. 2023*

Integrated MS/PhD in Computer Science and Engineering

Vision & Learning Lab (Advisors: 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

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(\*equal contribution)

1. Scaling Web Agent Training through Automatic Data Generation and Fine-grained Evaluation

Lajanugen Logeswaran, **Jaekyeom Kim**, Sungryull Sohn, Creighton Glasscock, Honglak Lee

Accepted for publication at **COLM 2025**

2. Process Reward Models That Think

Muhammad Khalifa, Rishabh Agarwal, Lajanugen Logeswaran, **Jaekyeom Kim**, Hao Peng, Moontae Lee, Honglak Lee, Lu Wang

[Preprint](#)

3. MLRC-Bench: Can Language Agents Solve Machine Learning Research Challenges?  
Yunxiang Zhang, Muhammad Khalifa, Shitanshu Bhushan, Grant D Murphy, Lajanugen Logeswaran, **Jaekyeom Kim**, Moontae Lee, Honglak Lee, Lu Wang  
[Preprint](#)
4. Do Not Trust Licenses You See: Dataset Compliance Requires Massive-Scale AI-Powered Lifecycle Tracing  
**Jaekyeom Kim\***, Sungryull Sohn\*, Gerrard Jeongwon Jo, Jihoon Choi, Kyunghoon Bae, Hwayoung Lee, Yongmin Park, Honglak Lee  
[Preprint](#)
5. Interactive and Expressive Code-Augmented Planning with Large Language Models  
Anthony Z. Liu, Xinhe Wang, Jacob Sansom, Yao Fu, Jongwook Choi, Sungryull Sohn, **Jaekyeom Kim**, Honglak Lee  
[Preprint](#), Accepted for publication at **ACL 2025**
6. AutoGuide: 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** ([Proceeding](#))
7. 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** ([Proceeding](#))
8. 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](#))
9. Constrained GPI for Zero-Shot Transfer in Reinforcement Learning  
**Jaekyeom Kim**, Seohong Park, Gunhee Kim  
**NeurIPS 2022** ([Proceeding](#))
10. Lipschitz-constrained Unsupervised Skill Discovery  
Seohong Park, Jongwook Choi\*, **Jaekyeom Kim\***, Honglak Lee, Gunhee Kim  
**ICLR 2022** ([Proceeding](#))
11. Time Discretization-Invariant Safe Action Repetition for Policy Gradient Methods  
Seohong Park, **Jaekyeom Kim**, Gunhee Kim  
**NeurIPS 2021** ([Proceeding](#))
12. Unsupervised Skill Discovery with Bottleneck Option Learning  
**Jaekyeom Kim\***, Seohong Park\*, Gunhee Kim  
**ICML 2021** ([Proceeding](#))
13. Drop-Bottleneck: Learning Discrete Compressed Representation for Noise-Robust Exploration  
**Jaekyeom Kim**, Minjung Kim, Dongyeon Woo, Gunhee Kim

ICLR 2021 ([Proceeding](#))

14. 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](#))

15. EMI: Exploration with Mutual Information

Hyoungseok Kim\*, **Jaekyeom Kim\***, Yeonwoo Jeong, Sergey Levine, Hyun Oh Song

**ICML 2019 (Long talk: 158/3424  $\approx$  4.6%)** ([Proceeding](#))

## HONORS & AWARDS

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**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**

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**Conference Reviewer**

- ICML (2021, 2022, 2023, 2024, 2025)
- NeurIPS (2021, 2022, 2023, 2024, 2025)
- ICLR (2022, 2023, 2024, 2025)
- ACL Rolling Review (2024, 2025)
- Workshops: Behavioral ML (NeurIPS 2024), Re-Align (ICLR 2025), Assessing World Models (ICML 2025)

**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