

# JAEKYEOM KIM

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## RESEARCH INTERESTS

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

## WORK EXPERIENCE

**LG Management Development Institute Co., Ltd** Aug. 2023 - Present

*AI Research Scientist* Aug. 2025 - Present

*Postdoctoral Researcher* Aug. 2023 - Jul. 2025

- 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

**Seoul National University** Mar. 2018 - Aug. 2023

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

(\*equal contribution)

1. 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

Accepted for publication at **NeurIPS 2025 Datasets and Benchmarks Track**, [Preprint](#)

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

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

[COLM 2025 \(Proceeding\)](#)

### 3. Process Reward Models That Think

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

Workshop on Test-time Scaling and Reasoning Models at COLM 2025, [Preprint](#)

### 4. Beyond Blind Following: Evaluating Robustness of LLM Agents under Imperfect Guidance

Yao Fu, Ran Qiu, Xinhe Wang, Jacob Sansom, Sathvika Ayyappa Prabhu, Huijie Tang, **Jaekyeom Kim**, Sungryull Sohn, Honglak Lee

Workshop on AI Agents: Capabilities and Safety at COLM 2025

### 5. 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](#)

### 6. 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  
**ACL 2025 (Proceeding)**

### 7. 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)**

### 8. 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)**

### 9. 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)**

### 10. Constrained GPI for Zero-Shot Transfer in Reinforcement Learning

**Jaekyeom Kim**, Seohong Park, Gunhee Kim  
**NeurIPS 2022 (Proceeding)**

### 11. Lipschitz-constrained Unsupervised Skill Discovery

Seohong Park, Jongwook Choi\*, **Jaekyeom Kim\***, Honglak Lee, Gunhee Kim  
**ICLR 2022 (Proceeding)**

### 12. Time Discretization-Invariant Safe Action Repetition for Policy Gradient Methods

Seohong Park, **Jaekyeom Kim**, Gunhee Kim  
**NeurIPS 2021 (Proceeding)**

13. Unsupervised Skill Discovery with Bottleneck Option Learning  
**Jaekyeom Kim\***, Seohong Park\*, Gunhee Kim  
**ICML 2021** ([Proceeding](#))
14. Drop-Bottleneck: Learning Discrete Compressed Representation for Noise-Robust Exploration  
**Jaekyeom Kim**, Minjung Kim, Dongyeon Woo, Gunhee Kim  
**ICLR 2021** ([Proceeding](#))
15. Model-Agnostic Boundary-Adversarial Sampling for Test-Time Generalization in Few-Shot Learning  
**Jaekyeom Kim**, Hyoungseok Kim, Gunhee Kim  
**ECCV 2020 (Oral: 104/5025 ≈ 2%)** ([Proceeding](#))
16. EMI: Exploration with Mutual Information  
Hyoungseok Kim\*, **Jaekyeom Kim\***, Yeonwoo Jeong, Sergey Levine, Hyun Oh Song  
**ICML 2019 (Long talk: 158/3424 ≈ 4.6%)** ([Proceeding](#))

## HONORS & AWARDS

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<b>PhD Dissertation Award</b> <i>Dept. of Computer Science and Engineering, Seoul National University</i>	<i>Aug. 2023</i>
<b>Star Student Researcher Award</b> <i>Brain Korea (BK21) FOUR Intelligence Computing, Seoul National University</i>	<i>Feb. 2023</i>
<b>Youlchon AI Star Fellowship</b> <i>Youlchon Foundation</i>	<i>Jul. 2022</i>
<b>Naver PhD Fellowship</b> <i>Naver</i>	<i>Dec. 2021</i>
<b>Google PhD Fellowship</b> <i>Google</i>	<i>Sep. 2021</i>
· Area: Machine Learning	
<b>Samsung Humantech Paper Award</b> <i>Samsung Electronics</i>	<i>Feb. 2021</i>
· Silver Prize in Signal Processing, award for research work	
<b>Qualcomm Innovation Fellowship Korea</b> <i>Qualcomm AI Research</i>	<i>Dec. 2020</i>
· Award for research work	
<b>On-Dream Outstanding Scholar Award</b> <i>Hyundai Motor Chung Mong-Koo Foundation</i>	<i>Dec. 2020</i>

**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

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**ACADEMIC SERVICE AND ACTIVITIES****Conference Reviewer**

- ICML (2021, 2022, 2023, 2024, 2025)
- NeurIPS (2021, 2022, 2023, 2024, 2025)
- ICLR (2022, 2023, 2024, 2025, 2026)
- ACL Rolling Review (2024, 2025)
- Workshops: Behavioral ML (NeurIPS 2024), Re-Align (ICLR 2025), Assessing World Models (ICML 2025), Test-time Scaling and Reasoning Models (COLM 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