

# JUNGHYUN KIM

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Department: Graduate School of AI,  
Seoul National University

## INTERESTS

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My research focuses on enabling intelligent agents to comprehend human language by **grounding linguistic concepts in perception and action**. Ultimately, I aim to empower **generalist robots** with the capability to understand and interact with the real world under minimal human supervision.

## EDUCATION

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### Seoul National University

Seoul, Korea

Integrated Ph.D. in Graduate School of Artificial Intelligence, Advised by B.T.Zhang.

2021–

- GPA: 4.27/4.3
- Main Courses: DL, ML, AI, Pattern Recognition, RL, LLM, Cognitive Science, Neuroscience, Data Science
- Research Paper Competition: Honorable Mention (2024, 2025)

### Yonsei University

Seoul, Korea

B.S. in Electrical and Electronic Engineering

2016–2021

- GPA: 4.13/4.5
- Main Courses: AI, Programming (C, Python, Matlab), Control Engineering, Mathematics, Probability, Data Structure and Algorithms, Signals, Circuits, OS, Communication Theory, Wireless and Mobile Networks
- Thesis: Large-Scale Tiny Face Detection using Multi-Task Cascaded Convolutional Neural Networks
- Yonsei Evison Award (2016), 1 highest honor(2020), 1 high honor(2020), 4 honors(2016, 2017, 2019)

## EXPERIENCE

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### BioIntelligence Laboratory, Seoul National University

Lab Manager

2023 - Current

### Samsung AI EXPERT Program

Teaching Assistant (Machine Learning & Python Programming)

Jun 2023

### SurroMind Corp.

Research Assistant (Developing Large-scale Visual Reasoning Model)

Aug-Dec 2022

### Samsung AI Research Center, Samsung Advanced Institute of Technology (SAIT)

Research Assistant (SEM Depth Prediction via Auto Encoder)

Apr-Jun 2022

### CS, Seoul National University

Teaching Assistant (Artificial Intelligence)

Mar-Aug 2022

### Robotics and Mobile Networks Lab, Yonsei University

Undergraduate Intern (Advised by Prof. Seoung-Lyun Kim)

Summer 2019

### QUEBON AI Mathematics

Company Intern

Summer 2018

## PUBLICATIONS

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\* denotes equal contribution

### INTERNATIONAL CONFERENCE

- [7] **PRORION: Enabling Proactive Cognition for Zero-shot Interactive Personalized Object Navigation**  
S. Jeong, **J. Kim**, G. C. Kang, B. T. Zhang  
*IEEE International Conference on Robotics and Automation (ICRA 2025)* (Under Review)
- [6] **Towards Ego-Exo View-Invariant Video Understanding**  
M. Jung, J. Xiao, **J. Kim**, I. J. Kwon, B. T. Zhang, A. Yao  
*The International Conference on Learning Representations (ICLR 2026)* (Under Review)
- [5] **CLIP-RT: Learning Language-Conditioned Robotic Policies from Natural Language Supervision**  
G. C. Kang\*, **J. Kim\***, K. Shim, J. K. Lee, B. T. Zhang  
*Robotics: Science and Systems (RSS 2025)*  
*3rd Workshop on Language and Robot Learning @ The Conference on Robot Learning (CoRL 2024)*
- [4] **Socratic Planner: Inquiry-Based Zero-Shot Planning for Embodied Instruction Following**  
S. Shin, S. Jeon\*, **J. Kim\***, G. C. Kang\*, B. T. Zhang.  
*IEEE International Conference on Robotics and Automation (ICRA 2025)*
- [3] **PGA: Personalizing Grasping Agents with Single Human-Robot Interaction**  
**J. Kim**, G. C. Kang\*, J. Kim\*, S. Yang, M. Jung, B. T. Zhang.  
*IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2024)*
- [2] **PROGrasp: Pragmatic Human-Robot Communication for Object Grasping**  
G. C. Kang, **J. Kim**, J. Kim, B. T. Zhang.  
*IEEE International Conference on Robotics and Automation (ICRA 2024)*
- [1] **GVCCI: Lifelong Learning of Visual Grounding for Language-Guided Robotic Manipulation**  
**J. Kim**, G. C. Kang\*, J. Kim\*, S. Shin, B. T. Zhang.  
*IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2023)*  
**Oral Presentation**

### DOMESTIC JOURNAL

- [1] **Tackling Entity Size-Based Bias in Visual Grounding**  
**J. Kim**, G. C. Kang, H. Sul, B. T. Zhang.  
*KIISE Transactions on Computing Practices (KTCP 2023)*

### DOMESTIC CONFERENCE

- [9] **Learning Language-Conditioned Robotic Policies with Fast and Lightweight Architectures**  
**J. Kim**, B. T. Zhang.  
*Korean Institute of Information Scientists and Engineers (KCC 2025, Best Paper Award)*
- [8] **Generalizing Language-Conditioned Robotic Policies via Large Language Models**  
**J. Kim**, B. T. Zhang.  
*Korean Institute of Information Scientists and Engineers (KCC 2025, Best Paper Award)*
- [7] **Stochastic Trajectory Diversification for Language-Conditioned Robotic Policy Learning**

**J. Kim**, G. C. Kang, K. Shim, B. T. Zhang.

*Korean Institute of Information Scientists and Engineers (KSC 2024, Best Paper Award)*

[6] **Data Collection Method for Robotic Action Learning through Natural Language Commands**

**J. Kim**, G. C. Kang, K. Shim, B. T. Zhang.

*Korean Institute of Information Scientists and Engineers (KSC 2024)*

[5] **Personalizing Large Language Models via Interest Trait Summarization**

**J. Kim**, B. T. Zhang.

*Korean Institute of Information Scientists and Engineers (KSC 2023)*

[4] **Unsupervised Adaptation for Zero-shot Visual Grounding via Pseudo Query Generation**

**J. Kim**, B. T. Zhang.

*Korean Institute of Information Scientists and Engineers (KCC 2023)*

[3] **Referring Expression Segmentation on Small Objects**

**J. Kim**, G. C. Kang, H. Sul, B. T. Zhang.

*Korean Institute of Information Scientists and Engineers (KSC 2022, Best Paper Award)*

[2] **Attention-based Text Augmentation Method for Referring Expression Segmentation**

**J. Kim**, G. C. Kang, H. Sul, B. T. Zhang.

*Korean Institute of Information Scientists and Engineers (KCC 2022)*

[1] **Adaptive Spatial Comprehension via Object Relationship Learning with Home Robot**

**J. Kim**, S. Lee, Y. Yoo, B. T. Zhang

*Korean Institute of Information Scientists and Engineers (KSC 2021)*

## PATENTS

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- (PCT, KR) Method for Generating Artificial Intelligence Model Using Natural Language Instruction, Method and Apparatus for Driving Robot Using Said Artificial Intelligence Model
- (PCT, KR) Method and Apparatus for Generating Natural Language Instruction Based on Visual Recognition
- (PCT, KR) Method And Apparatus For Creating An Artificial Intelligence Model That Recognizes Personalized Objects, And Robot Control Method And System Using The Same
- (KR) Method and Device for Interactive Object Grasping with Pragmatic Inference

## RESEARCH PROJECTS

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**Large-Parameter Action Foundation Models for Embodied Intelligent Agents Solving Real-life Problems of Real-World in Real-time**

National Research Foundation of Korea (NRF)

2024–Present

**Development of humanoid robots that feel like humans, communicate, and learn**

Korea Evaluation Institute of Industrial Technology (KEIT)

2024–Present

**Embodied Artificial Intelligence Interacting with Humans in Real World**

National Research Foundation of Korea (NRF)

2023–Present

**Self-directed AI Agents with Problem-solving Capability**

Institute for Information & Communications Technology Planning & Evaluation (IITP)

Funded by the Ministry of Science and ICT (MSIT)

2022–Present

## PROFESSIONAL ACTIVITIES

- **(Student Member)** IEEE Robotics and Automation Society 2025-Current
- **(Reviewer)** IEEE Robotics and Automation Letters (RA-L) 2024
- **(Reviewer)** IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2024
- **(Mentor)** POSCO DX AI Youth Challenge 2022-2025
- **(Member)** Korean Institute of Information Scientists and Engineers (KIISE) 2021-Current

## INVITED TALKS

- Korea AI Summit 2025, Seoul, Korea Nov 2025
- Korea AI Summit 2024, Seoul, Korea Dec 2024
- AI SEOUL 2024, Seoul, Korea Feb 2024
- AI Retreat, IPAI, SNU Nov 2023
- KOREA AI SUMMIT (spotlight session) Nov 2023
- IEEE RO-MAN Workshop on Learning by Asking for Intelligent Robots and Agents Aug 2023
- AI Symposium, AIGS, Korea Aug 2023

## SKILLS

- **Programming:** Python, C, Matlab, Verilog
- **Robots:** UR5, Kinova Gen3, TurtleBot4, HSR

## LANGUAGES

- **Korean:** Native
- **English:** Fluent (New TEPS: 483)

## EXTRACURRICULAR ACTIVITIES

- Seoul National University President's Cup 2025  
*Amature Golfer / Runner-up in the finals*
- Professional Golf Tour in Asia (Asian Tour) 2022  
*Professional Golf Caddie*
- Korea Professional Golfers' Association (KPGA) 2021-2022  
*Professional Golf Caddie*
- Seoul Junior Athletics Championships, Korean Olympic Committee (KOC) 2014  
*Junior Athlete / 2<sup>nd</sup> place in Seoul, Korea*
- Korea Junior Golf Association 2011–2013  
*Junior Golfer*