

# JUNGHYUN KIM

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## INTERESTS

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My research spans the domains of machine learning, natural language processing, computer vision, and robotics. I am dedicated to enabling intelligent agents to comprehend human language, with a focus on grounding of language to perception and action. My research objective is to empower agents to autonomously acquire an understanding of the real world with minimal human supervision.

## EDUCATION

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- Seoul National University** Seoul, Korea  
Integrated Ph.D. in Artificial Intelligence, Advised by B.T.Zhang, Biointelligence Lab. 2021–Current
- GPA: 4.27/4.3
  - Main Courses: DL, ML, AI, Pattern Recognition, RL, LLM, Cognitive Science, Neuroscience, Data Science
- 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
  - Yonsei Evison Award (2016), 1 highest honor(2020), 1 high honor(2020), 4 honors(2016, 2017, 2019)

## EXPERIENCE

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- Samsung AI EXPERT Program** Jun 2023  
AI Teaching Assistant
- Teaching Overall ML and Programming
- SurroMind** Aug-Dec 2022  
Company Project
- Large-scale Visual Reasoning Project (Develop a Baseline Visual Reasoning Model)
- POSCO DX AI Youth Challenge** 2022 - Current  
AI Mentor
- Mentoring AI Projects for the Challenge
- Samsung AI Research Center, Samsung Advanced Institute of Technology (SAIT)** Jun 2022  
Course Project
- SEM Depth Prediction via Auto Encoder
- CS, Seoul National University** Mar-Aug 2022  
Teaching Assistant
- Course: Artificial Intelligence
- Robotics and Mobile Networks Lab, EEE, Yonsei University** Summer 2019  
Laboratory Internship

## PUBLICATIONS

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### INTERNATIONAL CONFERENCE

- [4] **Socratic Planner: Inquiry-Based Zero-Shot Planning for Embodied Instruction Following**  
S. Shin, S. Jeon, G. C. Kang, **J. Kim**, B. T. Zhang.  
*arXiv preprint*, 2024
- [3] **PGA: Personalizing Grasping Agents with Single Human-Robot Interaction**  
**J. Kim**, G. C. Kang\*, J. Kim\*, S. Yang, M. Jung, B. T. Zhang.  
*arXiv preprint*, 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

- [6] **Personalizing Large Language Models via Interest Trait Summarization**  
**J. Kim**, B. T. Zhang.  
*Korean Institute of Information Scientists and Engineers (KSC 2023)*
- [5] **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)*
- [4] **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 Presentation Award
- [3] **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)*
- [2] **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)*

[1] **Prediction of Professional Golfer's Score by using Data Mining**

**J. Kim**  
*Korean Institute of Information Scientists and Engineers (KCC 2015)*

THESIS

[1] **Large-Scale Tiny Face Detection using MTCNN**

*Bachelor's Thesis, Yonsei University, 2020*

PATENTS

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- Method for Generating Artificial Intelligence Model Using Natural Language Instruction, Method and Apparatus for Driving Robot Using Said Artificial Intelligence Model
- Method and Apparatus for Generating Natural Language Instruction Based on Visual Recognition

PROFESSIONAL ACTIVITIES

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- (Reviewing) IEEE Robotics and Automation Letters (RA-L) 2024
- (Reviewing) IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2024

INVITED TALKS

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- 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

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

LANGUAGES

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

EXTRACURRICULAR ACTIVITIES

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- Professional Golf Caddie 2021-2022  
*Professional Golf Tour in Asia & Korea Professional Golfers' Association (KPGA) Korean Golf Tour*
- Seoul Junior Athletics Championships 2014  
*2<sup>nd</sup> place in Seoul, Korea*
- Korea Junior Golf Association 2011-2013  
*Junior Golfer*