

JUNGHYUN KIM

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INTERESTS

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

Seoul National University

Integrated Ph.D. in Artificial Intelligence, Advised by B.T.Zhang, Biointelligence Lab.

Seoul, Korea

2021–Current

– GPA: 4.27/4.3

– Main Courses: DL, ML, AI, Pattern Recognition, RL, LLM, Cognitive Science, Neuroscience, Data Science

Yonsei University

B.S. in Electrical and Electronic Engineering

Seoul, Korea

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

Samsung AI EXPERT Program

AI Teaching Assistant

Jun 2023

– Teaching Overall ML and Programming

SurroMind

Company Project

Aug-Dec 2022

– Large-scale Visual Reasoning Project (Develop a Baseline Visual Reasoning Model)

POSCO DX AI Youth Challenge

AI Mentor

2022 - Current

– Mentoring AI Projects for the Challenge

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

Course Project

Jun 2022

– SEM Depth Prediction via Auto Encoder

CS, Seoul National University

Teaching Assistant

Mar-Aug 2022

– Course: Artificial Intelligence

Robotics and Mobile Networks Lab, EEE, Yonsei University

Laboratory Internship

Summer 2019

PUBLICATIONS

INTERNATIONAL CONFERENCE

- [4] **Socratic Planner: Inquiry-Based Zero-Shot Planning for Embodied Instruction Following**
S. Shin, S. Jeon*, **J. Kim***, G. C. Kang*, 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.
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

- [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

- (PCT, KR) Method for Generating Artificial Intelligence Model Using Natural Language Instruction, (PCT, KR) 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

PROFESSIONAL ACTIVITIES

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

INVITED TALKS

- 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:** Kinova Gen3, UR5, Pepper

LANGUAGES

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

EXTRACURRICULAR ACTIVITIES

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