JUNGHYUN KIM

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INTERESTS

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

EDUCATION

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

POSCO DX
AI Mentor   Jul-Aug 2023

  – POSCO DX AI Youth Challenge
  – Mentoring AI Projects for the Challenge

Samsung
AI Teaching Assistant   Jun 2023

  – Samsung AI EXPERT Program
  – Teaching Overall ML and Programming

SurroMind
Company Project   Aug-Dec 2022

  – Large-scale Visual Reasoning
  – Develop a Baseline Visual Reasoning Model

POSCO ICT
AI Mentor   Jul-Aug 2022

  – POSCO ICT AI Youth Challenge
  – Mentoring AI Projects for the Challenge

Samsung
Course Project   Jun 2022
- SEM Depth Prediction via Auto Encoder

CS, Seoul National University
Teaching Assistant   Mar-Aug 2022
- Course: Artificial Intelligence

VLDL Reading Group
Founder and Organizer   2021 - Current
- Sharing and Reading Papers Related to Vision-Language and Deep Learning

Robotics and Mobile Networks Lab, EEE, Yonsei University
Laboratory Internship   Summer 2019
- Solving convex optimization problem using neural network

QUEBON AI Mathematics
Company Internship   Summer 2018

PUBLICATIONS

INTERNATIONAL CONFERENCE

[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, 2023

[2] **PROGrasp: Pragmatic Human-Robot Communication for Object Grasping**
G. C. Kang, **J. Kim**, J. Kim, B. T. Zhang.
arXiv preprint, 2023

[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

Invited Talks

- 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
- **Hardware Design:** Verilog

Languages

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

Extracurricular Activities

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