Joochan Kim

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Profile Summary

I am an AI researcher with a Master's degree in Computer Science from Seoul National University, specializing in Multimodal AI, Large Language Models, and Embodied AI. My professional experiences include roles at A*STAR and KIST, where I have designed and implemented multimodal and robotics-oriented AI solutions. My research contributions are published in leading conferences such as ICLR and CVPR, reflecting my expertise in Python, PyTorch, Transformers, and AWS cloud services. Passionate about developing innovative AI applications, I focus on practical solutions and advancing the intersection of AI and real-world applications.

Education

MS   **Seoul National University**, Computer Science and Engineering   Mar 2022 – Aug 2024
- **Supervisor:** Prof. Byoung-Tak Zhang, Bio-Intelligence Lab
- **Thesis:** Bias Analysis in Instructional Video Learning
- **Research Interests:** Multimodal, LLM, Embodied AI
- **Coursework:** Natural Language Processing, Advanced Artificial Intelligence(RL), Interdisciplinary Research in Computer Science(IoT)

BS   **Yonsei University**, Computer Science   Mar 2016 – Aug 2021
- **Coursework:** Artificial Intelligence, Capstone Design, Data Structure, Algorithm Analysis, Object Oriented Programming

Experience

Korea Institute of Science and Technology, Research Intern   Seoul, South Korea   Jan 2025 -
- Research Topic: Embodied AI especially Navigation, Autonomous Driving, and Manipulation

Agency for Science, Technology and Research, Intern   One North, Singapore   Mar 2024 – Aug 2024
- Analyzed complex robotics datasets to design and implement an advanced auto-labeling pipeline, transforming raw data into instruction-tuning datasets. Fine-tuned multimodal LLMs, enabling optimization for robotics vision tasks.
- Developed and deployed custom LLM solutions using LangChain for meeting summarization and recommendation tasks tailored to robotics domain with Speech-to-Text capabilities.
- Gained hands-on experience with AWS cloud services for distributed learning and ROS for real-world robotics applications.

Publications

Exploring Ordinal Bias in Action Recognition for Instructional Videos   March 2024
Joochan Kim, Minjoon Jung, Byoung-Tak Zhang
ICLRW 2025

Zero-Shot Vision-and-Language Navigation with Collision Mitigation in Continuous Environment   Jun 2024
Seongjun Jeong, Gi-Cheon Kang, *Joochan Kim*, Byoung-Tak Zhang
CVPRW 2024 ↗

Continual Vision-and-Language Navigation   Mar 2024

Seongjun Jung, Gi-Cheon Kang, Seongho Choi, *Joochan Kim*, Byoung-Tak Zhang

[arXiv Preprint ↗](#)

Background-aware Moment Detection for Video Moment Retrieval   Jun 2023

Minjoon Jung, Youwon Jang, Seongho Choi, *Joochan Kim*, Jin-Hwa Kim,
Byoung-Tak Zhang

[WACV 2025 ↗](#)

Modal-specific Pseudo Query Generation for Video Corpus Moment Retrieval   Dec 2022

Minjoon Jung, SeongHo Choi *Joochan Kim*, Byoung-Tak Zhang

[EMNLP 2022 ↗](#)

Projects

AI Paper Reviewer   [github.com/TikaToka/](#)
                                                                     [paper-reviewer-multi ↗](#)
- Enhanced the original AI Paper Reviewer tool with two key improvements: (1) Multilingual support and (2) Keyword-based curation, improving usability and relevance for diverse audiences.
- Tools Used: Python, Github Actions, Prompt Tuning

Question Answering using Question Generation   [github.com/TikaToka/](#)
                                                                     [CapstoneFall ↗](#)
- The Question Answering task was vulnerable to adversarial attacks, leading QA models to develop unnecessary dependencies between questions and answers. To address this issue, we proposed and implemented a novel approach to improve Question Answering models using Question Generation.
- Tools Used: Python, Pytorch

Effective Ways to Select Dataset from Large Corpus   [github.com/TikaToka/](#)
                                                                     [CapstoneSpring ↗](#)
- Most of the NLP datasets were too large, leading to high computational costs and training time. To mitigate this, we proposed and implemented an approach to reduce dataset size, minimizing training time and costs while improving performance.
- Tools Used: Python, Data Analysis, Graph

Awards

- **AIM Innovation Track Online Student Performance Presentation** Excellence Award
  With project 'Question Answering using Question Generation'
- **2020-2 Graduation Work Exhibition** Grand Prize
  With project 'Question Answering using Question Generation'
- **2020-1 Graduation Work Exhibition** Excellence Award
  With project 'Effective Ways to Select Dataset from Large Corpus'

Skills

Programming Language: Python

Deep Learning Library: Pytorch, Tensorflow, Langchain, Transformer, Huggingface

Others: AWS, ROS, Linux, Git