TAEWOON KIM

AI Researcher & Engineer

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SUMMARY

I love diving into AI stuff! I'm both a researcher and engineer in the AI world. It's like finding the sweet spot between brainstorming new ideas and making them actually work in real life. I believe figuring out and improving artificial general intelligence is super important for all of us. I'm all about open-sourcing projects because it's the best way to make AI better together.

SKILLS AND INTERESTS

Research: Artificial General Intelligence

Languages: Python, C++, C, Java, JavaScript, Shell Script, HTML, CSS

Frameworks /Libraries: Pytorch, TensorFlow, OpenCV, NumPy, SciPy, Flask, Jupyter Notebooks

Platforms: Docker, Linux, GCP, AWS

PROJECTS

AI — **Large Language Models** — **https://taewoon.kim/projects/llm**
I was involved in training some large language models with the Transformers.

AI — **Computer Vision** — **https://taewoon.kim/projects/computer-vision**
Some projects to allow the machines to see the world with their eyes.

AI — **A Machine With Human-Like Memory Systems** — **https://taewoon.kim/projects/human-memory**
A machine with a symbolic memory system (knowledge graph) trained with reinforcement learning.

Software development — **Tracking Glass Bottles With Letter in the Sea** — **https://taewoon.kim/projects/glass-track**
QR-code based tracking. Anyone can participate in this project!

EDUCATION

Sep/2020 - Dec/2024

PhD. Artificial Intelligence, Vrije Universiteit Amsterdam, Netherlands

- Titled *"A Machine With Human-Like Memory Systems"*. This machine is equipped with an external memory system, modeled with a knowledge graph, and uses reinforcement learning to learn essential human skills, such as managing memory, reasoning, exploring, etc.
- Supervised by Michael Cochez, Vincent François-Lavet, and Frank van Harmelen

Oct/2015 - Sep/2018

M.Sc. Computer Science, Hamburg University of Technology, Germany

- Focused on deep learning and computer vision.
- Wrote M.Sc. thesis *"One Shot Learning for Object Recognition in Pick and Insert Applications"* in collaboration with ABB and supervised by Alexander Schlaefer

Mar/2008 - Aug/2015

B.Sc. Electrical Engineering, Yonsei University, South Korea

- Focused on digital signal processing and computer vision.
- Wrote B.Sc. thesis *"Obstacle detection for the blind in C++ with OpenCV"*, supervised by Kwanghoon Sohn
- The lengthened period of study includes 2 years of mandatory social service.

EXPERIENCE

Sep/2020 - Dec/2024

Scientific Researcher, Learning and Reasoning Group, Vrije Universiteit Amsterdam, Netherlands

- Part of the PhD program.
- Carried out research in AI encompassing NLP, Computer Vision, Reinforcement Learning, Knowledge Graphs, etc., most of which can be found on my GitHub and Google Scholar.
- Taught computer programming courses, e.g., Python, and AI courses, e.g., board games with search algorithms and machine learning.
- Supervised B.Sc. and M.Sc. theses.

Jan/2023 - Dec/2023

Visiting Researcher, Interactive Intelligence Group, Technische Universiteit Delft, Netherlands

- Carried out research in AI, especially co-learning, where machines and humans learn to collaborate with each other.
- Supervised by Mark Neerincx.

Nov/2018
- Sep/2020

Computer Vision Engineer, Nect, Germany

- Worked with machine learning (mostly deep learning) to improve ID card and self verification processes.
- Mostly dealt with speech, image, and video data.
- Working at a start-up has enabled me to work closely with DevOps and Front-end developers and to better understand the big picture of AI companies.

Jan/2018
- Sep/2018

Intern and M.Sc. Thesis Student, ABB, Germany

- Applied robot vision with a RGBD camera.
- Trained computer vision deep learning models, e.g., ResNet, to extract features relevant for robotic pick and place skills.
- Used both RobotStudio and Robot Web Services based on RESTful APIs to interact with both virtual and real robot controllers.

Jul/2014
- Sep/2014

B.Sc. Intern, Brain Signal Processing Lab, Korea University, South Korea

- Learned mathematical and computer skills to process and visualize brain signals.
- Supervised by Jong-Hwan Lee