Jeongyeon Kim

📍 Seoul, South Korea   ✉ wjddus0203@g.skku.edu   📞 010-3439-7172

Profile

I'm a junior majoring in Artificial Intelligence, currently exploring a wide range of academic interests with a particular curiosity about multimodal learning. During my undergraduate studies, I aim to engage with various areas of AI to discover where my true passion lies.

Research Interests: Multimodal translation, embedding space analysis, and general-purpose AI

Education

BS in Applied Artificial Intelligence *Sungkyunkwan University*   *Mar 2023 – Present*
  ○ GPA: 4.11/4.5 (major)

5 Projects That Represent Me

1. Brain-Inspired Recurrent ANN Design (Summer 2024) [Project Video ↗](#) [Project Slides ↗](#)

Participated in an **inter-university research project to design a recurrent artificial neural network** inspired by the columnar structure of the neocortex. We applied a dopamine-modulated Hebbian Learning Rule (HLR) and optimized learning constants using Evolution Strategy (ES). The system featured real-time interaction between a C++ client and a Unity server.

I took the lead in **translating our neuroscience-inspired concept into a workable ANN architecture**, shaping and validating the model design throughout the project. This experience sparked my interest in reinforcement learning and models capable of active environmental exploration.

2. Exploring Text-Guided Image Manipulation with Diffusion-CLIP (CNT3058, Spring 2024)
[Project Report ↗](#)

This project explored the existing Diffusion-CLIP model. We observed that when manipulating the same image into different target texts, lower image quality for certain outputs might not stem from data scarcity but from an inappropriate t_0 value — a parameter introduced for faster sampling. To investigate this, we used CLIP to compute the semantic similarity between the input image and each target text, and **hypothesized that this similarity could help predict a more suitable t_0.**

We validated this through experiments. This project introduced me to generative models and led me to develop an interest in multimodal learning. I especially enjoyed critically reading the paper, **designing experiments, and exploring hypotheses through hands-on investigation.**

3. Reproducing Speaking Style Transfer Model (DSC3033, Fall 2024) [Project Slides ↗](#)

This project involved reproducing a paper on speaking style transformation. Through the process, I gained a practical understanding of voice-domain data processing and modeling. **Running large-scale speech experiments** over three days gave me hands-on experience with training workflows and helped me better grasp the challenges unique to **speech-based models.**

4. Learnable Activation Function Design (AAI2017, Spring 2024) [Project Report ↗](#)

Explored the idea of **making activation functions learnable** during training, instead of treating them as fixed hyperparameters. Proposed and tested novel activation function mechanisms. This project deepened my curiosity about research-driven modeling approaches.

5. Optimizing Bipedal Walker via Actor-Critic Algorithms (AAI2014, Fall 2024) [Project Video ↗](#)

As part of a **Reinforcement Learning** course team project, we modified the BipedalWalker environment to find the fastest walking agent. I was responsible for establishing baselines and analyzing performance across various Actor-Critic algorithms. **Collaborated with international teammates**, and used theoretical knowledge to interpret results and guide reward function design.

I've been exploring various areas of AI without drawing strict boundaries between subfields. I hope to engage in focused research during my undergraduate studies. Thank you.