Heechan Choi

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Research Interests

Computer Vision
- Diffusion models - Text-to-Image diffusion, Multiple images generation.
- Streaming Video Understanding

Multimodal AI
- Large Multimodal Model - Interleaved text & image generation.

Machine Learning
- Representation Learning, Self-supervised Learning

Education

Yonsei University — Seoul, Korea
B.S in Artificial Intelligence — 2022.03 - Current
- GPA: 4.20 / 4.30, Rank: 2 / 23.

Research Experience

CIPLAB @ Yonsei University — Seoul, Korea
Undergraduate Research Intern (Advisor: Seonjoo Kim) — 2023.07 - Current
- Researching on Large Multimodal Model for interleaved text, image generation.
- Researched on online, unsupervised video understanding.

Projects

Extending Output Token Length Limits in LMM — 2024.09 - Current
- Training-free method to extend Large Multimodal Model's output token limits for generating multiple images.

Small-sized Multimodal Model for Specific Task — 2024.08 - Current
- Researching on small-sized Large Multimodal Model using less GPU memory and only focusing on a specific task.
- Personal project

Generating Illustrated Instructions with LMM — 2024.07 - Current
- Make Large Multimodal Model to generate instructions for given goal with step-by-step images.

Tennis Game with Simple AI — 2024.04 - 2024.06
- Developing a game to play tennis against simple AI using OpenGL.
- Course project from CSI4105, Yonsei University.

Online Action Spotting with Soccer Game Videos — 2024.01 - 2024.05
- Find when the actions happened in long soccer game videos in online (streaming) settings.
- Task from SoccerNet Challenge at CVPR 2024.

Detecting AI generated text — 2023.11 - 2023.12
- Classifying whether the given sentences are AI-generated or not.
- Course project from CSI4101, Yonsei University.

Unsupervised Temporal Action Segmentation — 2023.07 - 2023.09
- Unsupervised method to segment videos according to its content without using per-video information.

Bird Image Classification — 2023.05 - 2023.06
- Image classification of bird species using ResNet and ensemble techniques.
- Course project from CSI4116, Yonsei University.

Skills

Programming Languages

- Python, C/C++

Tools

- Deep Learning Frameworks (PyTorch, Tensorflow, Keras)
- Python Scientific Computing Libraries (numpy, scipy, matplotlib, etc.)
- GPU Programming (CUDA)

Languages

- Korean (native), English