

Siyeol Jung

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RESEARCH INTERESTS

Primary Interests: Multimodal Interactive AI, Human Motion & Interaction Modeling, Multi-Agent Systems for Multimodal Reasoning

Long-term Goal: To build socially-intelligent AI that moves beyond task execution toward genuine collaboration with people — systems that perceive context, coordinate with others, and integrate naturally into human environments.

EDUCATION

Carnegie Mellon University, United States

Aug. 2025 – Feb. 2026

Visiting Student

- Coursework: Introduction to Deep Learning, Natural Language Processing, Large-Scale Media Analysis, Studio Project

UNIST, Korea

Mar. 2024 – Present

M.S. in Artificial Intelligence

Advisor: Prof. Taehwan Kim

Purdue University, United States

Mar. 2023 – Jun. 2023

Visiting Student

Soongsil University, Korea

Mar. 2018 – Feb. 2024

B.S. in Software

- Two-year leave of absence for mandatory military service (2019–2021)

RESEARCH EXPERIENCE

Cognitive Assistance Lab, Carnegie Mellon University, United States

Sep. 2025 – Nov. 2025

Visiting Researcher (Advisor: Kris Kitani)

- Collaborated with Dr. Yichen Peng on “DyaDiT,” a multimodal diffusion transformer for socially-aware dyadic gesture generation (accepted to CVPR 2026).
- Developed human–human interaction dynamics to synthesize socially favorable non-verbal behaviors in dyadic settings.

IMML Lab, UNIST, Korea

Jul. 2023 – Feb. 2024

Research Intern (Advisor: Taehwan Kim)

- Developed “DiffListener,” a discrete diffusion-based framework for empathetic listener motion generation (published at ICASSP 2025).
- Leveraged cross-modal learning to align listener responses with speaker audio, significantly enhancing the rhythmic synchrony and semantic relevance of empathetic motions.

CNIT, Purdue University, United States

Mar. 2023 – Jun. 2023

Visiting Student (Advisor: Eric Matson)

- Led a research team to design a hierarchical contrastive learning framework for sentiment analysis (published at AIXHeart 2024).
- Coordinated the full research pipeline, from data preprocessing to manuscript preparation, as the lead researcher.

PUBLICATIONS

SocialDiT: Social-Aware Diffusion Transformer for Human–Human Interaction Generation

Siyeol Jung, Taehwan Kim

Under Review (NeurIPS 2026)

Shape-Aware Human Interaction Generation with Capsule-Guided Flow Matching

Siyeol Jung, Taehwan Kim

Under Review (ECCV 2026)

DyaDiT: A Multi-Modal Diffusion Transformer for Socially Favorable Dyadic Gesture Generation

Yichen Peng, Jyun-Ting Song, Siyeol Jung, Ruofan Liu, Haiyang Liu, Xuangeng Chu, Ruicong Liu, Erwin Wu, Hideki Koike, Kris Kitani

CVPR 2026

Cross-Modal Emotion Transfer for Emotion Editing in Talking Face Video

Chanhyuk Choi, Taesoo Kim, Donggyu Lee, Siyeol Jung, Taehwan Kim

CVPR 2026

Environmental Understanding Vision-Language Model for Embodied Agent

Jinsik Bang, Jaeyeon Bae, Donggyu Lee, Siyeol Jung, Taehwan Kim

Findings of CVPR 2026

DiffListener: Discrete Diffusion Model for Listener Generation

Siyeol Jung, Taehwan Kim

ICASSP 2025

Crafting Query-Aware Selective Attention for Single Image Super-Resolution

Junyoung Kim, Youngrok Kim, **Siyeol Jung**, Donghyun Min

Preprint, 2025

Music Emotion Recognition Using Hierarchical Contrastive Learning

Siyeol Jung, Yubin Choi, E. Cho Smith, Mia Y. Wang

AIxHeart 2024

PATENTS

Method and Robot to Guide Path for the Blinds — KR Patent Application No. 10-2019-0035857

Youngjong Kim, Hakyoun Kim, Kwanghoon Park, **Siyeol Jung**, Junwoo Jung, Yeeun Heo

PROJECTS

VideoAgent: Iterative Multi-Agent Video Analysis System

Spring 2026

KRAFTON AI R&D Hackathon

- Independently designed and implemented an agent harness for long-video question answering — a four-agent pipeline (Orchestrator → Perceiver → Judge → Verifier) with a Verifier-to-Perceiver retry loop for iterative self-correction.
- Designed a time-budget-aware pipeline that routes each question by difficulty, and a two-pass frame-sampling scheme that removed upload latency — keeping all 20 videos processed within a strict time limit.
- Grounded key design choices — modality-separated audio/visual reasoning, evidence-based option narrowing, and iterative re-examination.

Social-Aware Human-Human Interaction Generation

Mar. 2026 - May. 2026

Independent Research Project | Submitted to NeurIPS 2026

- First symmetric dyadic motion generator conditioning on per-actor Big Five traits and pair-level familiarity, via a Social-Aware Cross-person Attention (SACA) module with trait-aware FiLM modulation and input-dependent residual gating.
- Proposed dual-axis classifier-free guidance to independently control action fidelity and social consistency; achieves lowest FID and accurate trait recovery vs. baselines.

Shape-Aware Human-Human Interaction Generation

Jan. 2026 - Mar. 2026

Independent Research Project | Submitted to ECCV 2026

- Proposed a flow matching framework with a Shape-aware DiT (S-DiT) for physically plausible 3D human-human interactions across diverse body shapes.
- Designed capsule-proxy guidance to penalize inter-person collisions during ODE sampling; achieved 0.28% inter-penetration on Inter-X without dense mesh simulation.

Multi-Agent System for Chart Question Answering

Fall 2025

Graduate Course Project, Carnegie Mellon University

- Designed a hierarchical multi-agent framework for ChartQA — a central orchestrating agent runs an iterative plan-delegate-aggregate-refine loop over chart-type-specialized perception agents.
- Worked on chart-type analysis and the baseline/ablation experiments, including the finding that text-based table prompts outperform bounding-box visual prompts for stable grounding.
- The framework reached 90.94% accuracy on the ChartQA benchmark, surpassing zero-shot and fine-tuned MLLM baselines.

EXTRACURRICULAR ACTIVITIES

Research Manager, R&D, Korea

Mar. 2022 – Dec. 2025

- Led research projects on super-resolution in computer vision and retrieval-augmented generation (RAG), proposing novel architectures and contributing to performance optimization.
- Managed a team of student researchers, setting research agendas and coordinating weekly reading groups and experiment discussions across multiple projects.

SCHOLARSHIPS

Academic Excellence Scholarship, Soongsil University, Korea

2022

Creative Innovation Leader Scholarship, KT, Korea

2022 – 2023

SKILLS

Programming & Tools: Python, PyTorch, C/C++, Linux, Django, OpenCV

Languages: Korean (native), English (proficient — OPIc: IH)

ACADEMIC SERVICE

Reviewer: ICASSP 2026