Sunwoo Kim

Research interests

- Computer graphics (Physics-based simulation, Computer animation)
- Robotics (Deep reinforcement learning, Optimal control)
- Body motion retrieval & generation (From video, text and audio)

Education

Seoul National University — Seoul, Korea
Master's degree in Computer Science — Sep. 2022.
Supervisor: Prof. Jehee Lee, *Unofficial: Prof. Sehoon Ha*

POSTECH — Pohang, Korea
Bachelor's degree in Creative IT Engineering — Feb. 2019.
Magna cumme laude *GPA: 3.88*

Work Experience

NCSOFT — Sungnam, Korea
AI Researcher — Aug 2022 – Present
Graphics AI Lab, NC Research

Publications

Conferences

Body Gesture Generation for Multimodal Conversational Agents
<u>Sunwoo Kim</u>, Minwook Chang, Yoonhee Kim, Jehee Lee
SIGGRAPH Asia Conference, 2024.

Towards Natural Prosthetic Hand Gestures: A Common-Rig and Diffusion Inpainting Pipeline
Seungyup Ka, Taemoon Jeong, <u>**Sunwoo Kim**</u>, Sankalp Yamsani, Joohyung Kim, Sungjoon Choi
IEEE Engineering in Medicine and Biology Society (EMBC), 2024.

Human Motion Control of Quadrupedal Robots using Deep RL
<u>**Sunwoo Kim**</u>, Maksim Sorokin, Jehee Lee, Sehoon Ha
Robotics: Science and Systems (RSS), 2022.

Journals

Controllable Single Motion Synthesis
Taehyun Byun, <u>**Sunwoo Kim**</u>, Minwook Chang, Sungjoon Choi
IEEE Transactions on Multimedia, 2024.(Submitted)

Workshops

HumanConQuad: Human Motion Control of Quadrupedal Robots using Deep RL

Sunwoo Kim, Maksim Sorokin, Jehee Lee, Sehoon Ha
Emerging Technologies, SIGGRAPH Asia, 2022.

Thesis
Developing Motion Control of Different Morphology using Deep Reinforcement Learning
Sunwoo Kim
Seoul National University, 2022.

Awards		
Master's Award: 2nd prize (Korea Computer Graphics Society)		2020
Human Motion Control of Quadrupedal Robots using Deep RL		
Grand prize (Ministry of Science and ICT, Korea)		2018
Improved Color Palette Extraction from Pictures (present 4:12, awarded 1:38:00)		
Grand prize (POSTECH)		2017
Creative Design III: Improved Color Palette Extraction from Pictures		
Grand prize (POSTECH)		2016
Creative Design II: Artistic Video Transfer using Deep Learning		

Teaching experience		
Teaching assistant, Seoul National University		Spring 2021
Core Computing: Computation thinking (Jehee Lee)		
Undergraduate tutor, POSTECH		Spring 2018
Digital system and Micro-processor (Jaejoon Kim)		

Professional Service

Paper Reviewer
Siggraph Asia

Skills

Programming and Software
C++, Python, CSS, FastAPI, Tensorflow, Pytorch, Physics Simulators (DARTsim, pyBullet, Raisim)
Experienced Robots
UnitreeRobotics A1
Languages
Korean (Native), English (Advanced)

References

Prof. Jehee Lee
Advisor, NCSOFT
Associate Professor, Seoul National University (on leave)

Prof. Sehoon Ha
Assistant Professor, Georgia Institute of Technology