

# Sunwoo Kim

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**GitHub:** <https://github.com/PulseKim/>

**Blog:** <https://pulsekim.github.io/>

## Research interests

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

## Education

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

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

## Work Experience

**NCSOFT** Gyeonggi-do, Korea  
AI Researcher Aug 2022 – Present  
Graphics AI Lab, NC Research

## Publications

### Conferences

#### **Body Gesture Generation for Multimodal Conversational Agents**

**Sunwoo Kim**, Minwook Chang, Yoonhee Kim, Jehee Lee  
*SIGGRAPH Asia, 2024. (To Appear)*

#### **Towards Natural Prosthetic Hand Gestures: A Common-Rig and Diffusion Inpainting Pipeline**

Seungyup Ka, Taemoon Jeong, **Sunwoo Kim**, Sankalp Yamsani, Joohyung Kim, Sungjoon Choi  
*IEEE Engineering in Medicine and Biology Society (EMBC), 2024.*

#### **Human Motion Control of Quadrupedal Robots using Deep RL**

**Sunwoo Kim**, Maksim Sorokin, Jehee Lee, Sehoon Ha  
*Robotics: Science and Systems (RSS), 2022.*

### 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.*

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

<b>Teaching experience</b>	<b>Teaching assistant</b> , Seoul National University	Spring 2021
	Core Computing: Computation thinking (Jehee Lee)	
	<b>Undergraduate tutor</b> , 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 (DART-sim, pyBullet, Raisim)  
**Experienced Robots**  
UnitreeRobotics A1  
**Languages**  
Korean (Native), English (Advanced)

**References**  
**Prof. Dr. Jehee Lee**  
Advisor, NCSOFT  
Associate Professor, Seoul National University (on leave)  
  
**Prof. Dr. Sehoon Ha**  
Assistant Professor, Georgia Institute of Technology