

# Sunwoo Kim

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**HomePage**      <https://pulsekim.github.io/>  
**Github**        <https://github.com/PulseKim>  
**Email**         [sunwoo.pulse.kim@gmail.com](mailto:sunwoo.pulse.kim@gmail.com)

## Research Interest

- Computer graphics (Physics-based simulation, Computer animation)
- Robotics (Deep reinforcement learning, optimal control)
- Human Gesture (Multimodal agents, Character gesture generation)
- Converting multiple modalities to body motion (from video to motion, from text to motion)

## Work Experience

**Aug 2022- Present**    **NCSoft**  
*Researcher, Graphics AI Lab*

## Education

**Sep 2022**        **Seoul National University**  
*Master Degree in Computer Science*  
Advisor: Jehee Lee

**Feb 2019**        **Pohang University of Science and Technology**  
*BSc in Creative IT Engineering*  
Magna cum laude (GPA: 3.88)

## Publication

“Human Motion Control of Quadrupedal Robots using Deep RL”

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

“HumanConQuad: Human Motion Control of Quadrupedal Robots using Deep RL”

**Sunwoo Kim**, Maksim Sorokin, Jehee Lee, Sehoon Ha  
Emerging Technologies, Siggraph Asia, 2022.  
ACM site

“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.  
Project Page

## Professional Service

Reviewer: Siggraph Asia (2024)

## Teaching Experience

**Mar 2021 -** Teaching Assistant

**Aug 2021** Head TA of *Core Computing: Thinking with Computers*

**Mar 2018 -** Undergraduate Tutor

**Aug 2018** Head Tutor of *Digital system and Micro-processor*

## Awards

2022 Best Master's Thesis Award: 2nd Prize - Korea Computer Graphics Society(KCGS)  
Human Motion Control of Quadrupedal Robots using Deep RL

2018 Creative IT Convergence Korea Grand prize - Ministry of Science and ICT, Korea  
Improved Color Palette Extraction from Pictures (presentation 4:12, awarded 1:38:00)

2017 Grand prize - Pohang University of Science and Technology  
Creative Design III - Improved Color Palette Extraction from Pictures

2016 Grand prize - Pohang University of Science and Technology  
Creative Design II - Artistic Video Transfer using Deep Learning

## Lab Internship

**Feb 2019 - Movement Research Lab**

**Aug 2019** *Trajectory optimization, Dexterous hand research*

Advisor: Jehee Lee

**Nov 2017 - Design Intelligence Lab**

**July 2018** *Sensor communication and sensing, Interactive space design, Hazardous environment alarm system*

Advisor: Juhong Park

**June 2016 - Sport Engineering Lab**

**Dec 2016** *First person view sports broadcasting in Pyongchang with KBS*

Advisor: Young-seok Kim

Last update: Feb. 2024.