

# Sun Woo Kim

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## Research Interests

- Character animation using both physics-based and kinematics-based methods
- Deep reinforcement learning for character and robot motion control
- Sim-to-real transfer for robot motion
- Text-to-motion retrieval and generation
- Body gesture generation for multimodal conversational agents

## Education

**Simon Fraser University** British Columbia, Canada  
Ph.D. Student in Computing Science Sep 2025 – Present  
Supervisor: Xue Bin (Jason) Peng

**Seoul National University** Seoul, Korea  
Master's degree in Computer Science Sep 2019 – Sep 2022  
Supervisor: Jehee Lee  
Collaborator: Sehoon Ha (Georgia Institute of Technology)  
Thesis: *Developing Motion Control of Different Morphology using Deep Reinforcement Learning*

**Pohang University of Science and Technology (POSTECH)** Pohang, Korea  
Bachelor's degree in Creative IT Engineering Feb 2015 – Feb 2019  
Magna cum laude GPA: 3.88 / 4.3

## Work Experience

**NC AI (Spun offed from NCSOFT)** Sungnam, Korea  
Graphics AI Researcher, Motion Service Lab Feb 2025 – Sep 2025  
Research Topic: Text to motion retrieval & Motion generation

**NCSOFT** Sungnam, Korea  
Graphics AI Researcher, Graphics AI Lab Aug 2022 – Feb 2025  
Research Topic: Gesture generation & Video to Motion

## Publications

### Conferences

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

**Sunwoo Kim**, Minwook Chang, Yoonhee Kim, Jehee Lee  
*SIGGRAPH Asia, 2024.*

#### **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 Reinforcement Learning**

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

### **Journals**

#### **Controllable Single Motion Synthesis**

Taehyun Byun, **Sunwoo Kim**, Minwook Chang, Sungjoon Choi  
*(Submitted)*

### **Workshops**

#### **HumanConQuad: Human Motion Control of Quadrupedal Robots using Deep Reinforcement Learning**

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

<b>Awards &amp; Scholarships</b>	<b>Special Grad Entrance Scholarship</b> (CS Department, SFU)	2025
	<b>Runner-up: KCGS Master's Award</b> (Korea Computer Graphics Society)	2022
	<b>Grand Prize: Creative ICT Forum</b> (Ministry of Science and ICT, Korea)	2018
	<b>Grand prize: Creative Design III</b> (POSTECH)	2017
	<b>Grand prize: Creative Design II</b> (POSTECH)	2016

<b>Teaching Experience</b>	<b>Teaching assistant</b> , Seoul National University	Spring 2021
	Core Computing: Computation thinking (Prof. Jehee Lee)	
	<b>Undergraduate tutor</b> , POSTECH	Spring 2018
	Intro to Digital System & Microprocessor Design (Prof. Jaejoon Kim)	

<b>Professional Service</b>	<b>Paper Reviewer</b> SIGGRAPH, SIGGRAPH Asia
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<b>Other Experience</b>	<b>Booth Staff</b> , NC AI exhibition booth at SIGGRAPH	2025
	Assisted in presenting research and interacting with attendees.	

<b>References</b>	<b>Prof. Xue Bin (Jason) Peng</b> Assistant Professor, Simon Fraser University Research Scientist, NVIDIA xbpeng@sfu.ca
	<b>Prof. Jehee Lee</b> Professor, Seoul National University jeheel@snu.ac.kr
	<b>Prof. Sehoon Ha</b> Assistant Professor, Georgia Institute of Technology sehoonha@gatech.edu