Sun Woo Kim

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Email: ska503@sfu.ca **Homepage**: https://pulsekim.github.io/ **Linkedin**: Link

Research Interests

- Physics & kinematics based character & robot animation
- Deep reinforcement learning for character & robot motion control
- Text-to-motion retrieval & generation
- Body gesture generation for 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
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 cumme 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 & generation

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

Publications

DSD: Learning Diverse and Reusable Motor Skills via Diffusion Skill Discovery
Sun Woo Kim, Xue Bin Peng
arXiv preprint arXiv:2609.17682, 2026

Controllable Single Motion Synthesis
Taehyun Byun, **Sunwoo Kim**, Minwook Chang, Sungjoon Choi
Pattern Recognition(Under Revision), 2026

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.
Emerging Technologies, SIGGRAPH Asia, 2022.

Awards & Scholarships

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

Teaching Experience

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

Professional Service

Paper Reviewer
SIGGRAPH, SIGGRAPH Asia, TVCG, ICRA

Other Experience

Exhibition Booth Staff
NC AI exhibition booth at SIGGRAPH 2025

Industry-Academia Research Collaboration Lead
RILAB, Korea University 2023
Kangwon University 2023
CALAB, Hanyang University 2023, 2024

References

Prof. Xue Bin (Jason) Peng
Assistant Professor, Simon Fraser University
Research Scientist, NVIDIA
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Prof. Jehee Lee
Professor, Seoul National University
jeheel@snu.ac.kr

Prof. Sehoon Ha
Assistant Professor, Georgia Institute of Technology
sehoonha@gatech.edu