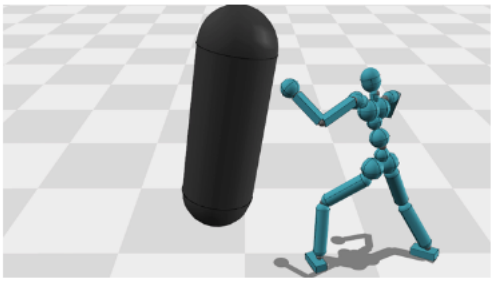
INTELLIGENT MOTION LAB

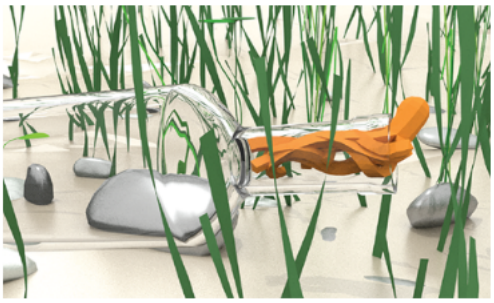
(지능형 동작 연구실)

Our mission is to explore intelligent ways of observing, understanding, and reproducing the motions of diverse entities, including humans, animals, and robots, across both virtual and real-world environments. We are particularly interested in the research topics listed below. We highly recommend that you visit our webpage (https://imo.snu.ac.kr) because the research topics we are pursuing cannot be adequately described simply by words.



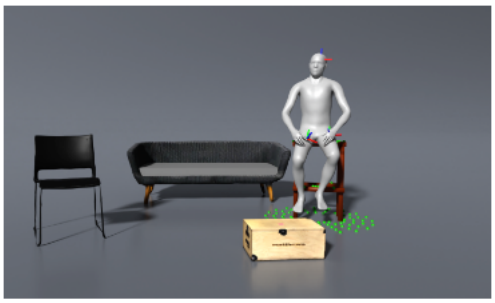
Deep Learning for Character Animation

We are interested in exploring how deep learning can be leveraged to improve the quality and efficiency of the existing production process for character animation. Additionally, we aim to develop novel methods for generating character animation that could potentially revolutionize the current paradigm.



Physically Based Simulation for Humans and Creatures

We are interested in simulating humans and creatures while adhering to the laws of physics. To achieve this, we develop diverse learning-based frameworks that utilize physics simulation and deep reinforcement learning to generate motions that are physically plausible and correct.



Motion Generation in VR/AR

Our objective is to generate realistic and natural motions for users or autonomous avatars, specifically designed for Virtual Reality (VR) and Augmented Reality (AR) applications. By achieving this, users can enjoy a fully immersive experience that closely resembles the movements found in the real world.

Anatomical Modeling and Simulation

Modeling the skeletal structure, muscular system, and nervous system of humans and animals is also a significant area of interest for us. By doing so, we aim to gain a deeper understanding of the principles governing their movements. This knowledge can be applied to various medical applications, including gait analysis, predictive gait simulation, surgery simulation, and more. This field is closely related to biomechanics, as it involves studying the mechanics of biological systems.

Robot Simulation and Control

Robot simulation and control are additional areas of interest for us. In particular, we focus on the design of controllers for quadruped robots to enable agile movements. Additionally, we are interested in exploring the potential of exoskeletal robots in assisting with locomotion.

Contact Info.

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