HUMAN MOVEMENT UNDERSTANDING FOR INTELLIGENT ROBOTS AND SYSTEMS

MAY 21, 2024 4:30-6:00 PM

人間情報知能化医療　Human Informatic AI Medicine
2024年度特徴あるプログラム　TOKUPRO 2024

LECTURE ROOM 3,
BASIC MEDICAL RESEARCH BUILDING 4F
(基礎研究棟4階第三講義室)

ABSTRACT

Human motor performance is a crucial focus in biomechanics, robotics, and machine learning. Understanding neuromuscular control is vital for prosthetics and safe human-robot interaction. Developing controllable biomechanical models enhances our understanding of musculoskeletal mechanics and aids in designing treatments like predictive simulations. This research aims to explore how neural control influences human motor performance through a portable, cyber-physical system and computational framework integrating robotics, AI, and musculoskeletal models. The talk will present modeling, control, and simulation components with examples on manipulation and locomotion skills, promising advancements in rehabilitation robotics. Additionally, recent work on integrating Virtual Environments and the Metaverse into research and teaching will be shared with real-world examples.

PROF. EMEL DEMIRCAN
-CALIFORNIA STATE UNIVERSITY

Prof. Emel Demircan is an Associate Professor at California State University, Long Beach, specializing in Mechanical and Aerospace Engineering, and Biomedical Engineering. With a Ph.D. in Mechanical Engineering from Stanford University, she has extensive experience in dynamics and control theory. Her research focuses on biomechanics, robotics, and cyber-physical systems, including rehabilitation robotics and sports biomechanics. Dr. Demircan is an OpenSim Fellow and founder of the IEEE RAS Technical Committee on "Human Movement Understanding." She also co-founded CyberSens Robotics.

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