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Personal Digital-Twin and Data Science

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Computer vision, AI and robotics extend and deepen the basic research about the human by motion measurements, motion analysis, biomechanical analysis, motion semiotics, and their data science. In 2020 we started Corporate Sponsored Research Program “Human-Motion Data Science” as a three-year research program in University of Tokyo supported by the five industrial partners. Informatics on the body and motion of humans enlightens a unique scientific domain, but yet remains unsystematized and is not fully developed. We study human-motion data science research toward social implementation into sports training, rehabilitation, health monitoring, and so on. The uniqueness of our approach is based on the computational algorithms and system designs originated in robotics. 3D pose and motion reconstruction from computer vision, biomechanical analysis of wholebody motion, and semantic interpretation of motion are all based on our original robotics studies of kinematics, dynamics, statistics, and high dimensional optimization. This talk will discuss monitoring the change of body functions and skills by accumulating personal body and motion data as the personal digital-twin, and on the horizon of its data science.

www.roboticsynl.com/hmds/

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