Human centric digital twins services

Physical Mobility Design by Human Digital Twins

Project Leader : Mitsunori Tada, Research Team Leader, Artificial Intelligence Research Center, National Institute of Advanced Industrial Science and Technology
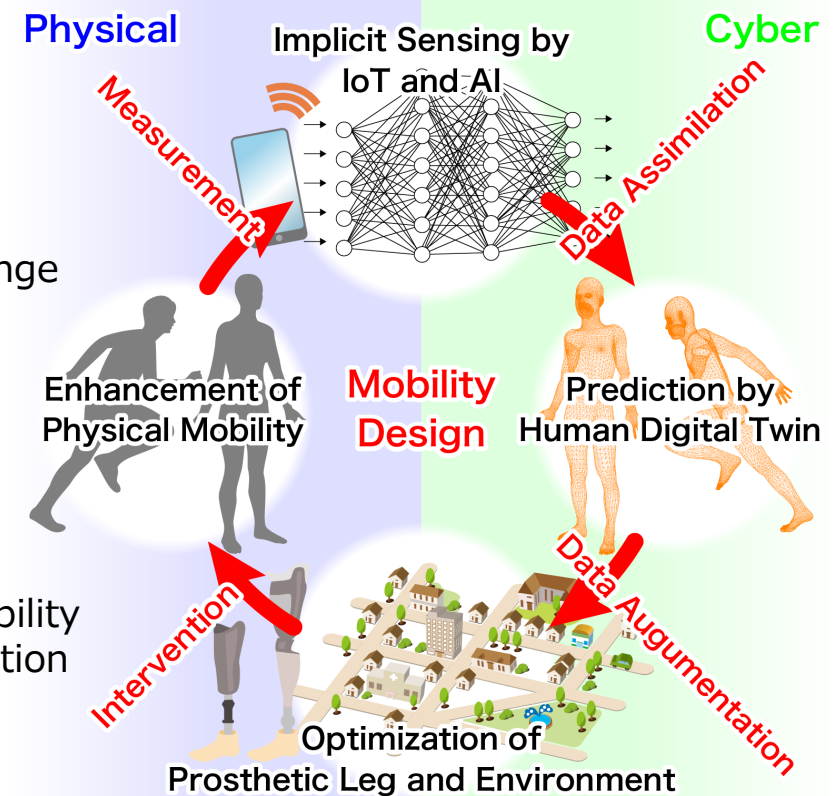
R&D Team : BionicM Inc. (https://www.bionicm.com/en/top/)

Summary :
In order to create an inclusive society where the physical mobility of prosthetic leg users is fully enhanced, we realize the world's first three technologies, human digital twins, implicit sensing, and optimization of mobility interfaces.

○ Human digital twins for predicting/accumulating mobility change
  ▪ Simulation of mobility by a neuromusculoskeletal model
  ▪ Individualization of the models by human data assimilation
  ▪ Prediction of mobility change by human data augmentation
○ Implicit sensing for measuring daily life mobility
  ▪ Measurement of daily life mobility by IoT devices and AI
  ▪ Refinement of the predictions by data assimilation
○ Optimization of mobility interfaces for enhancing physical mobility
  ▪ Individual optimization of prosthetic legs by data augmentation
  ▪ Social optimization of environments by data augmentation

https://www.airc.aist.go.jp/dhrt/

Physical — Cyber

Implicit Sensing by IoT and AI

Measurement

Data Assimilation

Enhancement of Physical Mobility

Mobility Design

Prediction by Human Digital Twin

Intervention

Data Augmentation

Optimization of Prosthetic Leg and Environment