Multimodal Human–Robot Interaction for Walker-Assisted Gait

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Abstract:
Human mobility is affected by different types of pathologies and also decreases gradually with age. In this context, Smart Walkers may offer important benefits for human assisted-gait in rehabilitation and functional compensation scenarios. This paper proposes a new interaction strategy for human-walker cooperation. The presented strategy is based on the acquisition of human gait parameters by means of data fusion from inertial measurement units and a laser range finder. This paper includes the mathematical formulation of