

Design of Lower Limb Exoskeleton

Authors: Abhishek A. Nimje, Atharva P. Patil, Dipti Y. Sakhare

Publisher: Springer Singapore

Published in: ICT Analysis and Applications

Abstract

This exoskeleton puts forth a unique design of robotic wearable devices that is ready to provide suitable gait rehabilitation to the elder ones or people after sustaining injury or disability. This system helps physical therapists to guide their patients with gait training programs being even far away from them using the prototype. This exoskeleton consists of a wearable device on either leg, which is controlled by a microcontroller, and the movement of the exoskeleton is made possible by a linear actuator which helps the user (patient) to lift and move the limb in the swing phase of walking. The actuator will simultaneously make the user walk within its domain. While operating the system, the user has to keep adding force to activate the force sensor. On the other hand, this wearable will also be beneficial for those people who find it difficult to walk in inclined planes. The exoskeleton has hip and knee movements powered in a single plane.
