

Wearable exoskeleton systems

Type de contenu : Texte

Type de médiation : sans médiation

Type de support : Volume

Titre(s) : Wearable exoskeleton systems : design, control and applications / edited by Shaoping Bai, Gurvinder S. Virk, and Thomas G. Sugar

Autre(s) responsabilité(s) : Bai, Shaoping (19..-....) (Éditeur scientifique)
Virk, Gurvinder S. (Éditeur scientifique)
Sugar, Thomas G. (19..-....) (Éditeur scientifique)

Publication : London (GB) : the Institution of engineering and technology, 2018

Description matérielle : 1 vol. (XIV-390 p.) : ill., graph., fotogr., tabl. ; 24 cm

Collection : IET control, robotics, and sensors series 108

ISBN : 978-1-78561-302-9
1-78561-302-2

EAN : 9781785613029 rel.

Appartient à la collection : IET control, robotics, and sensors series 108

Classification décimale Dewey : 629.892

Note sur les bibliographies et les index : Bibliogr. en fin de chapitres. Index

Note sur le contenu : Section 1: Review and overall requirements: 1: Lower-limb wearable robotics 2: Review of exoskeletons for medical and service applications: ongoing research in Europe on wearable robots, with focus on lower extremity exoskeletons 3: Soft wearable robots 4: Exploring user requirements for a lower body soft exoskeleton to assist mobility Section 2: Design and control of exoskeletons: 5: Design and control of spherical shoulder exoskeletons for assistive applications 6: Calibration platform for wearable 3D motion sensors 7: Control and performance of upper- and lower extremity SEA-based exoskeletons 8: Gait-event-based synchronization and control of a compact portable knee-ankle-foot exoskeleton robot for gait rehabilitation Section 3: Devices: 9: Real-time gait planning for a lower limb exoskeleton robot 10: Soft wearable assistive robotics: exosuits and supernumerary limbs 11: Walking assistive apparatus for gait training patients and promotion exercise of the elderly Section 4: Commercialization issues: 12: Regulatory issues for exoskeletons 13: Test methods for exoskeletons lessons learned from industrial and response robotics 14: Ekso Bionics

Résumé ou extrait : "Wearable exoskeletons are electro-mechanical systems designed to assist, augment, or enhance motion and mobility in a variety of human motion applications and scenarios. The applications, ranging from providing power supplementation to assist the wearers to situations where human motion is resisted for exercising applications, cover a wide range of domains such as medical devices for patient rehabilitation training recovering from trauma, movement aids for disabled persons, personal care robots for providing daily living assistance, and reduction of physical burden in industrial and military applications. The development of effective and affordable wearable exoskeletons poses several design, control and modelling challenges to researchers and manufacturers. Novel technologies are therefore being developed in adaptive motion controllers, human-robot interaction control, biological sensors and actuators, materials and structures, etc. In this book, the authors report recent advances and technology breakthroughs in exoskeleton developments. It will be of interest to engineers and researchers in academia and industry as well as manufacturing companies interested in developing new markets in wearable exoskeleton robotics." (source : 4e de couv.)

Sujet - Nom commun : Automatisation -- Automatisation
Robots -- Systèmes de commande
Systèmes homme-machine