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Autore	Hussain Irfan
Titolo	Augmenting Human Manipulation Abilities with Supernumerary Robotic Limbs [[electronic resource] /] / by Irfan Hussain, Domenico Prattichizzo
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Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XIII, 145 p. 77 illus., 72 illus. in color.)
Collana	Biosystems & Biorobotics, , 2195-3562 ; ; 26
Disciplina	629.892
Soggetti	Biomedical engineering Robotics Automation User interfaces (Computer systems) Biomedical Engineering and Bioengineering Robotics and Automation User Interfaces and Human Computer Interaction Enginyeria biomèdica Interficies d'usuari (Sistemes d'ordinadors) Robòtica en medicina Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Enhancing human hand manipulation abilities through supernumerary robotic ngers -- Compensating hand function in chronic stroke patients through the supernumerary robotic nger -- Design and development of soft supernumerary robotic ngers for grasp compensation in chronic stroke patients -- Wearable sensory motor interfaces for supernumerary robotic ngers -- Wearable EMG interfaces for motion control of supernumerary robotic ngers -- From grasp compensation towards hemiparetic upper limb rehabilitation -- Conclusions and future work.
Sommario/riassunto	This book offers a timely report on an emerging topic in the field of

wearable assistive technology: the design and development of robotic extra fingers. After a concise review of the state of the art and a description of earlier prototypes, it discusses the authors' efforts to address issues such as portability and wearability of the devices, including strategies to reduce fatigue and to integrate the motion of the extra fingers with that of the human hand. The book also explores optimized control algorithms and the design of wearable sensorimotor interfaces, and presents a set of tests carried out on healthy subjects and chronic stroke patients. Merging concepts from robotics, biomechanics, human factors and control theory and offering an overview of supernumerary robotic fingers, including the challenges, this book will inspire researchers involved in the development of wearable robotic devices and interfaces based on the principles of wearability, safety, ergonomics and user comfort. .
