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Nota di contenuto	Chapter 1: Brain-Computer Interface Research: A State-of-the-Art Summary 11 -- Chapter 2: Remediating Phonological Deficits in Dyslexia with Brain-Computer Interfaces -- Chapter 3: Highly generalizable spelling using a silent-speech BCI in a person with severe anarthria -- Chapter 4: Fast, accurate, unsupervised, and time-adaptive EEG-based auditory attention decoding for neuro-steered hearing devices -- Chapter 5: Closed-loop control of images based on electrocorticogram decoding in visual semantic space -- Chapter 6: Digital bridge to restore voluntary control of leg movements after

paralysis -- Chapter 7: Brain-body interfaces to assist and restore motor functions in people with paralysis -- Chapter 8: Keeping our eyes on the prize; Are we losing sight of the ‘why’ in BCI for neurorehabilitation? -- Chapter 9: Real-time decoding of leg motor function and dysfunction from the subthalamic nucleus in people with Parkinson’s disease -- Chapter 10: Designing Touch: Intracortical Neurohaptic Feedback in Virtual Reality -- Chapter 11: May the force be with you: biomimetic grasp force decoding for brain controlled bionic hands -- Chapter 12: Real-Time Intraoperative Sensorimotor Cortex Localization and Consciousness Assessment with the Spatial and Spectral Profile of the Median Nerve Somatosensory Evoked Potentials -- Chapter 13: A Summary of the 2022 BCI Award with Discussion of BCI Trends.

Sommario/riassunto

This book showcases recent trends in brain-computer interface development. It highlights fascinating results in areas such as language decoding, spinal cord stimulation to enable gait and to restore hand functions. The contributions are based on the 12 nominated brain-computer interface projects of the BCI Award 2022. Every year an international jury selects the most innovate BCI projects and nominates 12 projects before selecting the 1st, 2nd and 3rd place winners. In the book, each project is described in detail by the team of scientists behind it, and the editors provide a concluding discussion of the highlights and overall progress in the field. .