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Nota di contenuto	- Brain-Computer Interface Research: A State-of-the-Art Summary 12 -- A Rapidly Deployable High-Performance Speech Neuroprosthesis -- A High-Performance Neuroprosthesis for Speech Decoding and Avatar Control -- Multi-Electrode ICMS Enables Dexterous use of Bionic Hands -- CORGEE: Real-Time Hearing Diagnostics Based on EEG Responses to Natural Speech -- Semantic Reconstruction of Language from Non-Invasive Brain Recordings -- Real-Time Brain State-Coupled Network-Targeted Transcranial Magnetic Stimulation to Enhance Working Memory -- Biomimetic BCI Conveys Naturalistic Touch Sensations via Peripheral Nerve Stimulation for Bionic Legs -- An Intelligent System for Real-Time Assessment of Cortico-Muscular Coupling Index in ALS Disease -- On-Demand Sensory Enhancement via Transcutaneous

Cervical Vagus Nerve Stimulation -- Toward an Optical BCI: Overcoming the Limitation of Low Sampling Rate for Decoding Limb Movements -- A Summary of the 2023 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 speech neuroprostheses, bionic hands, memory enhancement, and the development of optical BCIs. The contributions describe the three winning projects and other nominated brain-computer interface projects selected by the expert international jury of the BCI Award 2023. 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.