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| Nota di contenuto | Are AI machines making humans obsolete -- The embodiment paradox integrating prosthetic systems to enhance human machine integration -- Affective Edge Computing Challenges and Opportunities in Decoding Emotional States -- Modeling Human Emotions via Interpretable EEG Based Spatio nterfaces for Neurorehabilitation Trends Methods and Challenges Temporal Attention Network -- Vibes that emote Eliciting affect through vibrotactile stimulation -- Assessing Cognitive Fatigue in Human Teammates During Human Robot Collaboration -- Mind Over Machine Using Action Observation to Reduce Mental Fatigue in Motor Imagery -- Synergies between Mind and Machine in Autism Research An AI Based Framework for Understanding and Reconstructing Neural Dynamics -- Human Intent into Motion Neuro Motor Controlled Prosthetic Hand -- Design of a Human Machine Interface for Assisted Speech on an EOG based voice speller -- Enhancing Hand Exoskeleton Grasping Performance with Robust Force Controller Development -- A Pairing Free Approach for End to End Mapping from Human to Kinematically Dissimilar Robotic Hands -- Human Centered Shared |

Autonomy for Motor Planning Learning and Control Applications -- Enhancing Surgeon Feedback via LSTM Driven Prediction of Tissue Puncturing Events -- Synergy based Intuitive Virtual and Augmented Therapy for Mental Health -- Building Neuro Musculoskeletal Models of Upper and Lower limb In Silico by Bridging Neural Circuitry Biomechanics and Intelligent Control.

Sommario/riassunto

As the boundaries between biological intelligence and artificial systems continue to dissolve, a new frontier is emerging—where thoughts can control machines, and machines can decode mental states. Bridging the Gap Between Mind and Machine takes readers on a compelling journey into the evolving nexus of neuroscience, artificial intelligence, brain-computer interfaces, cognitive science, and human-computer interaction. This book offers a sweeping view of how mind and machine are converging through advances in neural decoding, affective computing, wearable neurotechnology, robotics, and immersive interfaces such as virtual and augmented reality. At the heart of this exploration lies a fundamental question: how can we create seamless, intuitive, and ethical connections between human thought and computational systems? Drawing on contributions from leading researchers and interdisciplinary thinkers, this volume presents cutting-edge research, visionary frameworks, and real-world applications that are shaping the next generation of human-centered technology. From mental health interventions and assistive devices to artistic expression and cognitive augmentation, the chapters explore both the transformative potential and the ethical challenges of interfacing the mind with intelligent machines. Whether you're a neuroscientist, AI researcher, engineer, clinician, artist, or simply curious about the future of technology and consciousness, this book provides critical insights into how we can build technologies that not only respond to human intention—but resonate with human experience. Join us as we bridge science, design, and the human spirit to illuminate the path toward a more integrated and intelligent future.