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Titolo	Handbook of AI and Data Sciences for Sleep Disorders / / edited by Richard B. Berry, Panos M. Pardalos, Xiaochen Xian
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Descrizione fisica	1 online resource (X, 304 p. 63 illus., 54 illus. in color.)
Collana	Springer Optimization and Its Applications, , 1931-6836 ; ; 216
Disciplina	610.285
Soggetti	Mathematical optimization Calculus of variations Neurology Machine learning Artificial intelligence - Data processing Calculus of Variations and Optimization Machine Learning Data Science Intel·ligència artificial en medicina Trastorns del son Neurologia Aprenentatge automàtic Llibres electrònics
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Empowering Sleep Health: Unleashing the Potential of Artificial Intelligence and Data Science in Sleep Disorders -- Polysomnography Raw Data Extraction, Exploration, and Preprocessing -- Sleep stage probabilities derived from neurological or cardio-respiratory signals by means of artificial intelligence -- From Screening at Clinic to Diagnosis at Home: How AI/ ML/DL Algorithms are Transforming Sleep Apnea Detection -- Modeling and Analysis of Mechanical Work of Breathing -- A Probabilistic Perspective: Bayesian Neural Network for Sleep Apnea Detection -- Automatic and machine learning methods for detection

	and characterization of REM sleep behavior disorder -- Sleep Cyclic Alternating Pattern (CAP) as a Neurophysiological Marker of Brain Health -- Deep Learning with Electrocardiograms -- Machine learning automated analysis applied to mandibular jaw movements during sleep: a window on polysomnography -- Nightmare disorder: An Overview.
Sommario/riassunto	The rise of lifestyle changes resulting from constant connectivity, irregular work schedules, heightened stress, and disruptive sleep patterns, have contributed to increasing insomnia rates. Exacerbated by the COVID-19 pandemic, sleep disorders are more prevalent than ever. This handbook offers a comprehensive exploration of the fusion of Artificial Intelligence (AI) and data science within the realm of sleep disorders, presenting innovative approaches to diagnosis, treatment, and personalized care. The interdisciplinary nature of this handbook fosters collaboration between experts from diverse fields, including computer science, engineering, neuroscience, medicine, public health, AI, data science, and sleep medicine. Each chapter delves into specific aspects of sleep disorder analysis, innovative methodologies, novel insights, and real-world applications that showcase the transformative potential of AI and data science in sleep medicine, from analyzing sleep patterns and predicting disorder risk factors to utilizing big data analytics for large-scale epidemiological studies. This handbook hopes to offer a comprehensive resource for researchers, clinicians, and policymakers striving to address the challenges in sleep medicine.