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Nota di contenuto	Background and history -- Intelligent structural health monitoring with ultrasonic lamb waves -- Automatic detection of flaws in recorded music -- Pocket depth determination with an ultrasonographic periodontal probe -- Spectral intermezzo: Spirit security systems -- Lamb wave tomographic rays in pipes -- Classification of RFID tags with wavelet fingerprinting -- Pattern classification for interpreting sensor data from a walking-speed robot -- Cranks and charlatans and deepfakes.

Sommario/riassunto

This book discusses various applications of machine learning using a new approach, the dynamic wavelet fingerprint technique, to identify features for machine learning and pattern classification in time-domain signals. Whether for medical imaging or structural health monitoring, it develops analysis techniques and measurement technologies for the quantitative characterization of materials, tissues and structures by non-invasive means. Intelligent Feature Selection for Machine Learning using the Dynamic Wavelet Fingerprint begins by providing background information on machine learning and the wavelet fingerprint technique. It then progresses through six technical chapters, applying the methods discussed to particular real-world problems. Theses chapters are presented in such a way that they can be read on their own, depending on the reader’s area of interest, or read together to provide a comprehensive overview of the topic. Given its scope, the book will be of interest to practitioners, engineers and researchers seeking to leverage the latest advances in machine learning in order to develop solutions to practical problems in structural health monitoring, medical imaging, autonomous vehicles, wireless technology, and historical conservation.