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Nota di contenuto	Ch 1: Structured Methodologies for Iterative Concept Design and Biomedical Device Development -- Ch 2: ScientISST CORE: A Novel Hardware Platform for Rapid Prototyping -- Ch 3: Abstracting Low-level Hardware and Firmware Specificities Through Application Programming Interfaces (APIs) -- Ch 4: BioSPPy: Opening Physiological Signal Processing to the World -- Ch 5: Interactive Machine Learning: Strategies for Live Performance Using Electromyography -- Ch 6: REPOVIZZ: An Online Platform for Open Access and Visualization of Time-Aligned Multimodal Data Streams -- Ch 7: Creating a Biomedical Dataset: Conceiving a Purpose Statement, Developing an Experimental Protocol, and Addressing Data Management -- Ch 8: Using open-

source Hardware for Enhancing Lean Entrepreneurship -- Ch 9: Technology Transfer: From Research to Industrialization -- Ch 10: Case Study: Towards Firefighter Monitoring in the Real-World -- Ch 11: Case Study: Sympathia Sense -- Ch 12: Case Study: COPD Pulmonary Rehabilitation with Biofeedback Physiotherapy.

Sommario/riassunto

This book provides a practical end-to-end approach to open source technology in biomedical engineering, covering topics that range from hardware and software design to data acquisition, processing tools, and cloud-based storage. Biomedical device conceptualization, design of experimental evaluation studies, and moving from early-stage prototypes to shelve-worthy products benefiting from open source technologies are also covered. The technical chapters are complemented by working examples and address problems that new entrants and professionals encounter when developing work in biomedical engineering, human-computer interaction, physiological computing, psychophysiology, physiotherapy, and related areas. The book is enriched by case studies where open source technologies have been successfully used to accelerate new developments in biomedical engineering. Contributions are rooted in the state-of-the-art and latest advances in hardware platforms, Python for the signal processing and analysis components, and web-based technologies for the user interface components. Provides hardware, software, and product design guidelines; Includes source code, case studies, and application examples; Accessible to a broad audience interested in moving quickly from a biomedical idea to a solution.
