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Titolo	Advances in Electrodermal Activity Processing with Applications for Mental Health : From Heuristic Methods to Convex Optimization // by Alberto Greco, Gaetano Valenza, Enzo Pasquale Scilingo
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Soggetti	Biomedical engineering Signal processing Image processing Speech processing systems Bioinformatics Neurosciences Biomedical Engineering/Biotechnology Signal, Image and Speech Processing Biomedical Engineering and Bioengineering Computational Biology/Bioinformatics
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	1. Electrodermal Phenomena and Recording Techniques -- 2. Modeling for the Analysis of the EDA -- 3. Evaluation of CDA and CvxEDA models -- 4. Emotions and Mood States: Modeling, Elicitation, and Recognition -- 5. Experimental Applications on Multi-Sensory Affective Stimulation -- 6. Conclusions.
Sommario/riassunto	This book explores Autonomic Nervous System (ANS) dynamics as investigated through Electrodermal Activity (EDA) processing. It presents groundbreaking research in the technical field of biomedical engineering, especially biomedical signal processing, as well as clinical fields of psychometrics, affective computing, and psychological assessment. This volume describes some of the most complete, effective, and personalized methodologies for extracting data from a

non-stationary, nonlinear EDA signal in order to characterize the affective and emotional state of a human subject. These methodologies are underscored by discussion of real-world applications in mood assessment. The text also examines the physiological bases of emotion recognition through noninvasive monitoring of the autonomic nervous system. This is an ideal book for biomedical engineers, physiologists, neuroscientists, engineers, applied mathematicians, psychiatric and psychological clinicians, and graduate students in these fields. This book also: Expertly introduces a novel approach for EDA analysis based on convex optimization and sparsity, a topic of rapidly increasing interest Authoritatively presents groundbreaking research achieved using EDA as an exemplary biomarker of ANS dynamics Deftly explores EDA's potential as a source of reliable and effective markers for the assessment of emotional responses in healthy subjects, as well as for the recognition of pathological mood states in bipolar patients .

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