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Descrizione fisica	1 online resource (XIII, 309 p. 99 illus., 88 illus. in color.)
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Soggetti	Medical informatics Pattern perception Signal processing Image processing Speech processing systems Health Informatics Pattern Recognition Signal, Image and Speech Processing
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di contenuto	1. Introduction -- 2. Literature Review -- 3. A Novel Breath Acquisition System Design -- 4. An LDA Based Sensor Selection Approach -- 5. Sensor Evaluation in a Breath Acquisition System -- 6. Improving the Transfer Ability of Prediction Models -- 7. Learning Classification and Regression Models for Breath Data with Drift based on Transfer Samples -- 8. A Transfer Learning Approach with Autoencoder for Correcting Instrumental Variation and Time-Varying Drift -- 9. Drift Correction using Maximum Independence Domain Adaptation -- 10. Feature Selection and Analysis on Correlated Breath Data -- 11. Breath Sample Identification by Sparse Representation-based Classification -- 12. Monitor Blood Glucose Levels via Sparse Representation Approach -- 13. Diabetics by Means of Breath Signal Analysis -- 14. A Breath Analysis System for Diabetes Screening and Blood Glucose Level Prediction. 15. A Novel Medical E-Nose Signal Analysis System -- 16. Book Review and Future Work.
Sommario/riassunto	This book describes breath signal processing technologies and their

applications in medical sample classification and diagnosis. First, it provides a comprehensive introduction to breath signal acquisition methods, based on different kinds of chemical sensors, together with the optimized selection and fusion acquisition scheme. It then presents preprocessing techniques, such as drift removing and feature extraction methods, and uses case studies to explore the classification methods. Lastly it discusses promising research directions and potential medical applications of computerized breath diagnosis. It is a valuable interdisciplinary resource for researchers, professionals and postgraduate students working in various fields, including breath diagnosis, signal processing, pattern recognition, and biometrics.
