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   Titolo   Brain Fingerprint Identification / / by Wanzeng Kong, Xuanyu Jin

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   Collana   Brain Informatics and Health, , 2367-1750

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   Disciplina   006.3

   Soggetti   Artificial intelligence
                       Biometric identification
                       Human-machine systems
                       Machine learning
                       Artificial Intelligence
                       Biometrics
                       Human-Machine Interfaces
                       Machine Learning

   Lingua di pubblicazione Inglese

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   Livello bibliografico Monografia

   Nota di contenuto   Chapter 1 Overall of Brain Fingerprint Identification -- Chapter 2 Basics of EEG Signals -- Chapter 3 Multi-Task Brain Fingerprint Identification Based on Brain Networks -- Chapter 4 Multi-Task Brain Fingerprint Identification Based on Low-Rank and Sparse Decomposition Model -- Chapter 5 Multi-Task Brain Fingerprint Identification Based on Residual and Multi-scale Spatio-temporal Convolution Neural Network (RAMST-CNN) -- Chapter 6 Multi-Task Brain Fingerprint Identification Based on Convolutional Tensor-Train Neural Network (CTNN) -- Chapter 7 Specific-Task and Multi-Session Brain Fingerprint Identification Based on Multi-scale Convolution and Graph Pooling Network (MCGP) -- Chapter 8 Multi-Task and Multi-Session Brain Fingerprint Identification Based on Tensorized Spatial-Frequency Attention Network with Domain Adaptation (TSFAN) -- Chapter 9 Task-independent Cross-Session Brain Fingerprint Identification Based on Disentangled Adversarial Generalization Network (DAGN) -- Chapter 10 Summary.

   Sommario/riassunto This open access book delves into the emerging field of biometric

identification using brainwave patterns. Specifically, this book presents recent advances in electroencephalography (EEG)-based biometric recognition to identify unique neural signatures that can be used for secure authentication and identification. Traditional biometric systems such as fingerprints, iris scans, and face recognition have become integral to security and identification. However, these methods are increasingly vulnerable to spoofing and other forms of attack. Unlike other traditional biometrics, EEG signals are non-invasive, continuous authentication, liveness detection, and resistance to coercion due to the complexity and uniqueness of brain patterns. Therefore, it is particularly suitable for high-security fields such as military and finance, providing a promising alternative for future high-security identification and authentication. However, most of the existing brain fingerprint identification studies require subjects to perform specific cognitive tasks, which limits the popularization and application of brain fingerprint identification in practical scenarios. Additionally, due to the low signal-to-noise ratio (SNR) and time-varying characteristics of EEG signals, there are distribution differences in EEG data across sessions from several days, leading to stability issues in brain fingerprint features extracted at different sessions. Finally, because the EEG signal is affected by the coupling of multiple factors and the nervous system has continuous spontaneous variability, which makes it difficult for the brain fingerprint identification model to be suitable for the scenarios of unseen sessions and cognitive tasks, and there is the problem of insufficient model generalization. In this book, based on traditional machine learning methods and deep learning methods, the authors will carry out multi-task single-session, single-task multi-session, and multi-task multi-session brain fingerprint identification research respectively for the above problems, to provide an effective solution for the application of brain fingerprint identification in practical scenarios.

2. Record Nr.	UNINA9910337614803321
Autore	Sharp Ian
Titolo	Wireless Positioning: Principles and Practice / / by Ian Sharp, Kegen Yu
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ISBN	981-10-8791-1
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (XIII, 626 p. 287 illus., 241 illus. in color.)
Collana	Navigation: Science and Technology, , 2522-0462
Disciplina	621.382
Soggetti	Telecommunication
	Signal processing
	Communications Engineering, Networks
	Signal, Speech and Image Processing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Part I Engineering of Positioning Systems -- Architecture of tracking systems -- Signaling techniques -- Use of inertial sensors in position determination -- Link budget -- Application cases -- System testing -- Part II Recent Research into Terrestrial Positioning -- Wideband reconstruction based positioning -- Toa error measurement, modeling and analysis -- Gdop analysis for indoor positioning -- Enhanced least-squares positioning algorithm -- Receiver signal strength positioning -- Integrated indoor positioning -- Positional accuracy measurement and error modeling -- Concluding remarks.
Sommario/riassunto	This book focuses on non-GNSS positioning systems and approaches. Although it addresses both theoretical and practical aspects, the primary focus is on engineering practice. This is achieved by providing in-depth studies on a number of major topics such as tracking system architecture, link budget, system design, implementation, testing, and performance evaluation. It studies four positioning application cases in detail: covert vehicle tracking, horse racing, rowing, and tracking for field sports. Its comprehensive and systematic treatment of practical issues in wireless positioning makes the book particularly suitable for readers who are interested in learning about practical wireless positioning solutions. It will also benefit researchers, engineers and