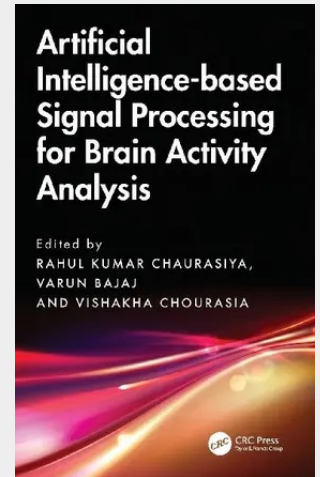


Artificial Intelligence-based Signal Processing for Brain Activity Analysis

Artificial Intelligence-based Signal Processing for Brain Activity Analysis is an indispensable resource for addressing the pressing challenges in medicine, detection of brain-related disorders, brain-computer interfacing, and neuromarketing. It delves into contemporary AI, ML, and signal processing approaches for analysis of brain activity. The salient features of this book include: (1) Acquisition, preprocessing, noise removal, and processing methods for brain signals, including EEG, ECoG, MEG, fMRI, and fNIRS. (2) Latest AI and ML algorithms relevant for classification of brain signals, including traditional machine learners, deep transfer learners, LSTM and auto-encoders, and transformers. (3) Applications in medicine, including mental healthcare, mental stress reduction, psychological disorder detection, OCD detection, sleep disorder detection, seizure detection, brain tumor detection, Alzheimer's disease detection, and bipolar disorder prediction. (4) Applications in brain-computer interfacing (BCI), gaming and entertainment, and neuromarketing. (5) Recent case studies and experimental and research works. The text is primarily written for senior undergraduate students, graduate students, industry professionals, researchers, and academicians working in the field of AI, ML, signal processing techniques, biomedical signal processing, brain signal analysis, and brain activity analysis.

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