

1. Record Nr.	UNINA9910826297003321
Autore	Abhang Priyanka A.
Titolo	Introduction to EEG- and speech-based emotion recognition // Priyanka A. Abhang, Bharti Gawali, Suresh Mehrotra
Pubbl/distr/stampa	Amsterdam, [Netherlands] : , : Academic Press, , 2016 ©2016
ISBN	0-12-804531-0
Descrizione fisica	1 online resource (200 p.)
Disciplina	004.019
Soggetti	Human-computer interaction Electroencephalography Artificial intelligence Pattern Recognition, Automated Artificial Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Front Cover; INTRODUCTION TO EEG- AND SPEECH-BASED EMOTION RECOGNITION; INTRODUCTION TO EEG- AND SPEECH-BASED EMOTION RECOGNITION; Copyright; Contents; Preface; Acknowledgments; 1 - Introduction to Emotion, Electroencephalography, and Speech Processing; 1.1 INTRODUCTION; 1.2 BRAIN PHYSIOLOGY; 1.2.1 Major Brain Areas; The Brain Stem; The Midbrain; The Limbic System; The Cerebral Cortex; The Basal Ganglia; The Cerebellum; The Cerebrum; 1.3 LOBES OF THE BRAIN AND THEIR FUNCTIONS; 1.3.1 The Frontal Lobe; 1.3.2 The Parietal Lobe; 1.3.3 The Temporal Lobe; 1.3.4 The Occipital Lobe 1.4 ELECTROENCEPHALOGRAPHY 1.5 HUMAN AUDITORY SYSTEM; 1.5.1 Speech Production Mechanism; 1.6 SPEECH PROCESSING; 1.6.1 Speech Emotion Recognition; 1.7 ORGANIZATION OF THE BOOK; 1.8 CONCLUSION; References; 2 - Technological Basics of EEG Recording and Operation of Apparatus; 2.1 INTRODUCTION TO ELECTROENCEPHALOGRAPHY; 2.1.1 Brain Waves; 2.1.2 Applications of EEG; 2.2 MODERN EEG EQUIPMENT; 2.2.1 Wired EEG Systems; 2.2.1.1

Merits; 2.2.1.2 Demerits; 2.2.2 Wireless EEG Systems; 2.2.2.1 Merits; 2.2.2.2 Demerits; 2.2.3 Evoked Potentials; 2.3 THE EEG 10/20 ELECTRODES PLACEMENT SYSTEM
2.4 EEG ACQUISITION TOOL2.4.1 EEG Acquire Software; 2.4.2 EEG Analysis Software; 2.5 ARTIFACTS; 2.5.1 Eye Blinks; 2.5.2 Eye Movement; 2.5.3 Muscular Artifacts; 2.5.4 Electrode Artifacts; 2.6 SPEECH ACQUISITION AND PROCESSING; 2.6.1 Applications of Speech Recognition22; 2.6.2 Acquisition Setup; 2.7 COMPUTERIZED SPEECH LABORATORY; 2.7.1 Key Features of CSL; 2.7.2 Facilities Available in CSL; 2.7.2.1 Record and Speak Facilities; 2.7.2.2 Analytical Tools; 2.7.2.3 Other Special Features; 2.8 CONCLUSION; References; 3 - Technical Aspects of Brain Rhythms and Speech Parameters
3.1 INTRODUCTION TO BRAIN-WAVE FREQUENCIES3.1.1 Gamma Waves; 3.1.2 Beta Waves; 3.1.3 Alpha Waves; 3.1.4 Theta Waves; 3.1.5 Delta Waves; 3.2 SPEECH PROSODIC FEATURES; 3.2.1 Acoustic Features for Emotions; 3.2.1.1 Prosody-Related Signal Measures; 3.2.1.1.1 ENERGY; 3.2.1.1.2 PITCH; 3.2.1.1.3 FORMANT; 3.2.1.1.4 INTENSITY; 3.2.1.1.5 LOUDNESS; 3.2.1.1.6 DURATION; 3.2.1.1.7 SAMPLING RATE; 3.2.1.2 Spectral Characteristics Measures; 3.2.1.2.1 MEL-FREQUENCY CEPSTRAL COEFFICIENTS; 3.2.1.2.2 MEL FILTER BANK ENERGY BASED SLOPE FEATURES; 3.2.1.3 Voice Quality-related Measures; 3.2.1.3.1 JITTER
3.2.1.3.2 SHIMMER3.2.1.3.3 HARMONIC TO NOISE RATIO; 3.3 SIGNAL PROCESSING ALGORITHMS; 3.3.1 Preprocessing Algorithms; 3.3.1.1 Common Spatial Patterns (CSP); 3.3.1.2 Independent Component Analysis; 3.3.2 Feature Extraction; 3.3.2.1 Principal Components Analysis; 3.3.2.2 Mel Frequency Cepstral Coefficients for Speech Feature Extraction; 3.3.3 Feature Classification; 3.3.3.1 Linear Discriminative Analysis; 3.3.3.2 Support Vector Machine; 3.3.3.2.1 LINEAR CLASSIFICATION; 3.3.3.2.2 NON-LINEAR CLASSIFICATION; 3.4 CONCLUSION; References; 4 - Time and Frequency Analysis; 4.1 INTRODUCTION
4.2 FOURIER TRANSFORMATION
