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Nota di contenuto	Automated Diagnosis of Alzheimer’s Disease by Integrating Genetic Biomarkers and Tissue Density Information -- A Neural Model of Number Interval Position Effect (NIPE) in Children -- A Volumetric Radial LBP Projection of MRI Brain Images for the Diagnosis of Alzheimer’s Disease -- Telemetry System for Cochlear Implant Using ASK Modulation and FPGA -- MBMEDA: An Application of Estimation of Distribution Algorithms to the Problem of Finding Biological Motifs -- Towards a Generic Simulation Tool of Retina Models -- Specialist

Neurons in Feature Extraction Are Responsible for Pattern Recognition Process in Insect Olfaction -- Intensity Normalization of 123 I-ioflupane-SPECT Brain Images Using a Model-Based Multivariate Linear Regression Approach -- Independent Component Analysis-Based Classification of Alzheimer's Disease from Segmented MRI Data -- Trajectories-State: A New Neural Mechanism to Interpretate Cerebral Dynamics -- Global and Local Features for Char Image Classification -- On the Automatic Tuning of a Retina Model by Using a Multi-objective Optimization Genetic Algorithm -- Creating Robots with Personality: The Effect of Personality on Social Intelligence -- Artificial Metaplasticity: Application to MIT-BIH Arrhythmias Database -- Toward an Upper-Limb Neurorehabilitation Platform Based on FES-Assisted Bilateral Movement: Decoding User's Intentionality -- Decoding of Imaginary Motor Movements of Fists Applying Spatial Filtering in a BCI Simulated Application -- The Koniocortex-Like Network: A New Biologically Plausible Unsupervised Neural Network -- Towards an Integrated Semantic Framework for Neurological Multidimensional Data Analysis -- Some Results on Dynamic Causal Modeling of Auditory Hallucinations -- Retinal DOG Filters: High-pass or High-frequency Enhancing Filters? -- Spatio-temporal Dynamics of Images with Emotional Bivalence -- Interstimulus Interval Affects Population Response in Visual Cortex in vivo -- Towards the Reconstruction of Moving Images by Populations of Retinal Ganglion Cells -- FPGA Translation of Functional Hippocampal Cultures Structures Using Cellular Neural Networks -- Parkinson's Disease Monitoring from Phonation Biomechanics -- Retinal DOG Filters: Effects of the Discretization Process -- Computable Representation of Antimicrobial Recommendations Using Clinical Rules: A Clinical Information Systems Perspective -- Abstracting Classification Models Heterogeneity to Build Clinical Group Diagnosis Support Systems.-. Using EEG Signals to Detect the Intention of Walking Initiation and Stop -- Low-cost Remote Monitoring of Biomedical Signals -- Asynchronous EEG/ERP Acquisition for EEG Teleservices -- A Machine Learning Approach to Prediction of Exacerbations of Chronic Obstructive Pulmonary Disease -- Brain-Computer Interfacing to Heuristic Search: First Results -- English Phonetics: A Learning Approach Based on EEG Feedback Analysis -- Dynamic Modelling of the Whole Heart Based on a Frequency Formulation and Implementation of Parametric Deformable Models -- Multimodal 3D Registration of Anatomic (MRI) and Functional (fMRI and PET) Intra-patient Images of the Brain -- Localisation of Pollen Grains in Digitised Real Daily Airborne Samples -- Estimation of the Arterial Diameter in Ultrasound Images of the Common Carotid Artery -- Comparison of Free Distribution Software for EEG Focal Epileptic Source Localization -- Weighted Filtering for Neural Activity Reconstruction Under Time Varying Constraints -- Neural Activity Estimation from EEG Using an Iterative Dynamic Inverse Problem Solution -- Supervised Brain Tissue Segmentation Using a Spatially Enhanced Similarity Metric -- iLU Preconditioning of the Anisotropic-Finite-Difference Based Solution for the EEG Forward Problem -- EEG Rhythm Extraction Based on Relevance Analysis and Customized Wavelet Transform -- Estimation of M/EEG Non-stationary Brain Activity Using Spatio-temporal Sparse Constraints -- Connectivity Analysis of Motor Imagery Paradigm Using Short-Time Features and Kernel Similarities -- Robust Linear Longitudinal Feedback Control of a Flapping Wing Micro Air Vehicle -- Use and Adoption of a Touch-Based Occupational Therapy Tool for People Suffering from Dementia -- Multisensory Treatment of the Hemispatial Neglect by Means of Virtual Reality and Haptic Techniques -- Evaluation of Color Preference for Emotion Regulation --

Elicitation of Emotions through Music: The Influence of Note Value -- Towards Emotionally Sensitive Conversational Interfaces for E-therapy -- Automatic Drawing Analysis of Figures Included in Neuropsychological Tests for the Assessment and Diagnosis of Mild Cognitive Impairment -- Identification of Loitering Human Behaviour in Video Surveillance Environments -- Stress Detection Using Wearable Physiological Sensors -- An Embedded Ground Change Detector for a “Smart Walker”.

Sommario/riassunto

The two volumes LNCS 9107 and 9108 constitute the proceedings of the International Work-Conference on the Interplay Between Natural and Artificial Computation, IWINAC 2015, held in Elche, Spain, in June 2015. The total of 103 contributions was carefully reviewed and selected from 190 submissions during two rounds of reviewing and improvement. The papers are organized in two volumes, one on artificial computation and biology and medicine, addressing topics such as computational neuroscience, neural coding and neuro-informatics, as well as computational foundations and approaches to the study of cognition. The second volume deals with bioinspired computation in artificial systems; topics alluded are bio-inspired circuits and mechanisms, bioinspired programming strategies, and bioinspired engineering AI&KE.