Table of Contents

Modeling Interaction in Automated E-Coaching - A Case from Insomnia Therapy 1
Robbert Jan Beun, Fiemke Griffioen-Both, Rene Ahn, Siska Fitrianie, and Jaap Lancee

Towards Agent-based Data Privacy Engineering 5
Kato Mivule

Improving Skills Management using Objectives within a Multi-Agent System 13
Olivier Chator and Jean-Marc Salotti

Discriminative Learning of Relevant Percepts for a Bayesian Autonomous Driver Model 19
Mark Eilers and Claus Mobus

Modelling Spatial Understanding: Using Knowledge Representation to Enable Spatial Awareness in a Robotics Platform 26
Martin Lochner, Charlotte Sennersten, Ahsan Morshed, and Craig Lindley

Consensus Making Algorithms based on Invariants Perception for Cognitive Sharing in Multi-Robot 32
Shodai Tomita, Kosuke Sekiyama, and Toshio Fukuda

The Role of of Expert Judgement in Optimising Preventive Maintenance and System Architecture 38
Shawulu Nggada and Yiannis Papadopoulos

Two Approaches to Implementing Metacognition 45
Emily Hand, Darsana Josyula, Matthew Paisner, Elizabeth McNany, Donald Perlis, and Michael Cox

Recognition of Unspoken Words Using EEG Signals 51
May Salama, Loa'ay ElSherif, Haytham Lashin, and Tarek Gamal

Motorsport Driver Workload Estimation in Dual Task Scenario. A Methodology for Assessing Driver Workload in a Racing Simulator 56
Luca Baldisserri, Riccardo Bonetti, Francesco Pon, Leandro Guidotti, Maria Giulia Losi, Roberto Montanari, Francesco Tesauri, and Simona Collina

ACT-R Meets Usability 62
Nele Russwinkel and Sabine Prezenski

HORUS: A Configurable Reasoner for Dynamic Ontology Management 66
Giovanni Lorenzo Napoleoni, Maria Teresa Pazienza, and Andrea Turbati

An Ontology and Brain Model-based Semantic Discovery and Visualization System 72
Xia Lin, Mi Zhang, Yue Shang, and Yuan An

Linked Closed Data Using PKI: A Case Study on Publishing and Consuming data in a Forensic Process 77
Tamer Fares Gayed, Hakim Lounis, and Moncef Bari

Using Resevoir Computing for Wind Ramp Events Classification and Prediction 87
Tatyana Mendonca Pio dos Santos and Meuser Jorge Silva Valenca

Missing Categorical Data Imputation for FCM Clusterings of Mixed Incomplete Data 94
Takashi Furukawa, Shin-ichi Ohnishi, and Takahiro Yamanoi

Evaluating AOU e-Learning Platform Based on Khan's Framework 99
Bayan Abu-Shawar

Emotion Classification Based on Bio-Signals Using Machine Learning Algorithms 104
Eun-Hye Jang, Byoung-Jun Park, Sang-Hyeob Kim, Myung-Ae Chung, Yeongji Eum, and Jin-Hun Sohn

Cognitive Robotics: For Never was a Story of More Owe than This 110
Emanuel Diamant

Mechanical Cognitivization 116
Gideon Avigad and Avi Weiss

A Design of Memory-based Learning Classifier usign Genteic Strategy for Emotion Classification 120
Byoung-Jun Park, Eun-Hye Jang, Sang-Hyeob Kim, Chul Huh, and Myung-Ae Chung

A HMM Model Based on Perceptual Codes for On-line Handwriting Generation 126
Hala Bezine, Wafa Ghanmi, and Adel Alimi

How to Make Robots Feel and Social as Humans 133
Aleksandar Rodic and Milos Jovanovic

A Study of Retrieval Algorithms of Sparse Messages in Networks of Neural Cliques 140
Ala Aboudib, Vincent Gripon, and Xiaoran Jiang

Cognitive Linguistic Representation of Legal Events: Towards a Semantic-based Legal Information Retrieval 147
Anderson Bertoldi, Rove Luiza de Oliveira Chishman, Sandro Jose Rigo, and Thais Domenica Minghelli

Automatic Classification of Cells Patterns for Triple Negative Breast Cancer Identification 151
Juan Luis Fernandez-Martinez, Ana Cernea, Enrique J. de Andres-Galiana, Primitiva Menendez-Rodriguez, Jose A. Galvan, and Carmen Garcia-Pravia

An Interval Type-2 Fuzzy Neural Network for Cognitive Decisions 159
Gang Leng, Anjan Kumar Ray, Thomas Martin McGinnity, Sonya Coleman, Liam Maguire, and Philip Vance

Robust Detection and Tracking of Regions of Interest for Autonomous Underwater Robotic Exploration 165
Angel Alejandro Maldonado Ramirez, Luz Abril Torres Mendez, and Edgar Alonso Martinez Garcia

Creating Confidence Intervals for Reservoir Computing's Wind Power Forecast using the Maximum likelihood method and the Distribution based method 172
Breno Menezes and Meuser Valenca

A Comparative Study of Neural Network Techniques to Perform Early Diagnosis of Alzheimer's Disease 178
Lara Dantas and Meuser Valenca

Using Reservoir Computing for Forecasting of Wind Power Generated by a Wind Farm 184
Bruna Aguiar and Meuser Valenca

Training a Cognitive Agent to Acquire and Represent Knowledge from RSS feeds onto Conceptual Graphs 189
Alexandros Gkiokas and Alexandra I. Cristea

Cognitive Social Simulation and Collective Sensemaking: An Approach Using the ACT-R Cognitive Architecture 195
Paul R Smart and Katia Sycara

Handling Seasonality using Metacognition 205
Kenneth M'Bale and Darsana Josyula

Toward Modeling Task Difficulty: The Case of Chess 211
Dayana Hristova, Matej Guid, and Ivan Bratko

The GATM Computer Assisted Reasoning Framework in a Security Policy Reasoning Context 215
Johan Garcia

Towards a Cloud-Based Architecture for 3D Object Comprehension in Cognitive Robotics 220
Charlotte Sennersten, Ahsan Morshed, Martin Lochner, and Craig Lindley

The Behavioural Motivation Model in Open Distance Learning 226
Oleg Zaikin, Magdalena Malinowska, Lise Busk Kofoed, Ryszard Tadeusiewicz, and Andrzej Zylawski

The Virtual Patient Simulator of Deep Brain Stimulation in the Obsessive Compulsive Disorder Based on Connectome and 7 Tesla MRI Data 235
Giorgio Bonmassar and Nikos Makris

System for Evaluation of Cognitive Performance under the Emotional Stressors 239
Kresimir Cosic, Sinisa Popovic, Bernard Kovac, Davor Kukolja, Dragutin Ivanec, and Tanja Jovanovic

Altered Resting-State Functional Connectivity in Internet Addicts 246
Jin-Hun Sohn, Ji-Woo Seok, Suk-Hee Kim, and Sunju Sohn

Evaluating Data Storytelling Strategies: A Case Study on Urban Changes 250
Flavia De Simone, Federica Protti, and Roberta Presta

A Brain-Computer Interface Speller with a Reduced Matrix: A Case study in a Patient with Amyotrophic Lateral Sclerosis 256
Ricardo Ron-Angevin, Sergio Varona-Moya, Leandro da Silva-Sauer, and Trinidad Carrion-Robles

Visual Awareness in Mind Model CAM 262
Zhongzhi Shi, Jinpeng Yue, and Gang Ma

How the Relationship Between Information Theory and Thermodynamics Can Contribute to Explaining Brain and Cognitive Activity: An Integrative Approach 269
Guillem Collell and Jordi Fauquet

Is Word Generalization for Novel Concepts Modelled by Similarity or by Formal Concepts? 274
Sujith Thomas and Harish Karnick