



COGNITIVE 2011

The Third International Conference on Advanced Cognitive Technologies and Applications

September 25-30, 2011
Rome, Italy

COGNITIVE 2011 Editors

Terry Bossomaier, Charles Sturt University, Australia

Pascal Lorenz, University of Haute Alsace, France

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2011) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed by Curran Associates, Inc. (2012)

International Academy, Research, and Industry Association (IARIA)
412 Derby Way
Wilmington, DE 19810

Phone: (408) 893-6407
Fax: (408) 527-6351

petre@iaria.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

COGNITIVE 1: BRAIN

Analysis of the Effect of Cognitive Load on Gait with off-the-shelf Accelerometers	1
<i>E. Martin, R. Bajcsy</i>	
The Entry Point in the Identification of Familiar Objects	7
<i>B. Bazzanella, P. Bouquet</i>	
From fMRI Data To Cognitive Models: Testing the ACT-R Brain Mapping Hypothesis with an Ex-Post Model	13
<i>J. Lenk, C. Mobus, J. Ozyurt, C. Thiel, A. Claassen</i>	
Discovering the Phase of a Dynamical System from a Stream of Partial Observations with a Multi-map Self-organizing Architecture	19
<i>B. Khouzam, H. Frezza-Buet</i>	
Global Context Influences Local Decisions	25
<i>T. Bossomaier, M. Harre</i>	

COGNITIVE 2: APPLICATIONS I

Cognitive System with VoIP Secondary Users over VoIP Primary Users	30
<i>Y. Mihov, B. Tsankov</i>	
Refining a User Behaviour Model Based on the Observation of Emotional States	36
<i>Y. Aguiar, M. Vieira, E. Galy, J. Mercantini, C. Santoni</i>	
Knowledge Representation in Visual Design	41
<i>E. Grabska, G. Slusarczyk, S. Gajek</i>	
Task-based Guidance of Multiple UAV Using Cognitive Automation	47
<i>J. Uhrmann, A. Schulte</i>	

COGNITIVE 3: APPLICATIONS II

Learning Odors for Social Robots: The URBANO Experience	53
<i>D. Galan, R. Galan, A. Martinez, I. Moreno</i>	
PREVIRNEC: A New Platform For Cognitive Tele-Rehabilitation	59
<i>J. Solana, C. Caceres, E. Gomez, A. Garcia-Molina, A. Garcia-Rudolph, T. Roig, J. Tormos, S. Ferrer-Celma, M. Ferre-Bergada, P. Garcia-Lopez</i>	
Improvements on Relational Reinforcement Learning to Solve Joint Attention	63
<i>R. Silva, R. Romero</i>	
Qualitative Spatial Knowledge Acquisition Based on the Connection Relation	70
<i>T. Dong, T. Bruck</i>	
Thought Experiments in Linguistic Geometry	76
<i>B. Stilman</i>	

COGNITIVE 4: AGENTS

Informed Virtual Geographic Environments for Knowledge Representation and Reasoning in Multiagent Geosimulations	84
<i>M. Mekni, B. Moulin</i>	
A Holonic Approach for Providing Composite Services	93
<i>I. Diaconita, F. Leon, A. Leca</i>	
Education Portal for Reactive and Proactive Service Provision	99
<i>S. Stoyanov, G. Cholakov, V. Valkanova, M. Sandalski</i>	
Supporting Adaptability in Agent-Based Digital Healthcare Ecosystem	104
<i>V. Rentea, F. Ricci, L. Serbanati, A. Vasileteanu</i>	

COGNITIVE 5: COGNITION

A New Ranking Technique For Integration Among Higher-Level And Lower-Level Domain Ontologies And Its Application To The Electromagnetic Domain	110
<i>A. Esposito, M. Zappatore, L. Tarricone</i>	
Generalized Implicative Model of a Fuzzy Rule Base and its Properties	116
<i>M. Dankova</i>	
A Two-Level Decision Support System For Supplier Diversification.....	122
<i>E. Guldogan, O. Bulut</i>	

COGNITIVE 6: AUTONOMY

Developing a Decision Tool to Evaluate Unmanned System's Command and Control Technologies in Network Centric Operations Environments.....	129
<i>M. Rodas, M. Veronda, C. Szatkowski</i>	
A Framework for Creativity-oriented Autonomy based on Online Social Networks	136
<i>B. Shekar, S. Bagchi</i>	
Inverse ACO Applied for Exploration and Surveillance in Unknown Environments	142
<i>R. Calvo, J. Oliveira, R. Romero, M. Figueiredo</i>	
Basic Study for Human Brain Activity Based on the Spatial Cognitive Task	148
<i>S. Shimizu, N. Takahashi, Y. Hirata, H. Nara, H. Inoue</i>	
Author Index	