

# International Journal of Natural Computing Research

April-June 2014, Vol. 4, No. 2

## Table of Contents

### SPECIAL ISSUE ON BIO-INSPIRED COMPUTATION

#### GUEST EDITORIAL PREFACE

- iv *Luís Correia, LabMag, University of Lisbon, Lisbon, Portugal*  
*André Carvalho, Department of Computer Science, University of São Paulo, São Paulo, Brazil*  
*Sara Silva, LabMag, University of Lisbon, Lisbon, Portugal*

#### RESEARCH ARTICLES

- 1 **PMCNS: Using a Progressively Stricter Fitness Criterion to Guide Novelty Search**  
*Jorge Gomes, LabMag, Faculdade de Ciências da Universidade de Lisboa, Lisboa, Portugal and Instituto de Telecomunicações, Lisboa, Portugal*  
*Paulo Urbano, LabMag, Faculdade de Ciências da Universidade de Lisboa, Lisboa, Portugal*  
*Anders Lyhne Christensen, Instituto Universitário de Lisboa (ISCTE-IUL), Lisboa, Portugal and Instituto de Telecomunicações, Lisboa, Portugal*
- 20 **A Guided Mutation Operator for Dynamic Diversity Enhancement in Evolutionary Strategies**  
*José L. Guerrero, Computer Science Department, Applied Artificial Intelligence Research Group, University Carlos III of Madrid, Colmenarejo, Spain*  
*Antonio Berlanga, Computer Science Department, Applied Artificial Intelligence Research Group, University Carlos III of Madrid, Colmenarejo, Spain*  
*José M. Molina, Computer Science Department, Applied Artificial Intelligence Research Group, University Carlos III of Madrid, Colmenarejo, Spain*
- 40 **SOSPD Controllers Tuning by Means of an Evolutionary Algorithm**  
*Jesús-Antonio Hernández-Riveros, Facultad de Minas, Universidad Nacional de Colombia, Medellín, Colombia*  
*Jorge-Humberto Urrea-Quintero, Facultad de Minas, Universidad Nacional de Colombia, Medellín, Colombia*
- 59 **Online Evolution of Adaptive Robot Behaviour**  
*Fernando Silva, Instituto de Telecomunicações, Lisboa, Portugal and LabMag, Faculdade de Ciências, Universidade de Lisboa, Lisboa, Portugal*  
*Paulo Urbano, LabMag, Faculdade de Ciências, Universidade de Lisboa, Lisboa, Portugal*  
*Anders Lyhne Christensen, Instituto de Telecomunicações, Lisboa, Portugal and Instituto Universitário de Lisboa (ISCTE-IUL), Lisboa, Portugal*

#### Copyright

The **International Journal of Natural Computing Research (IJNCR)** (ISSN 1947-928X; eISSN 1947-9298), Copyright © 2014 IGI Global. All rights, including translation into other languages reserved by the publisher. No part of this journal may be reproduced or used in any form or by any means without written permission from the publisher, except for noncommercial, educational use including classroom teaching purposes. Product or company names used in this journal are for identification purposes only. Inclusion of the names of the products or companies does not indicate a claim of ownership by IGI Global of the trademark or registered trademark. The views expressed in this journal are those of the authors but not necessarily of IGI Global.

The *International Journal of Natural Computing Research* is indexed or listed in the following: Bacon's Media Directory; Cabell's Directories; DBLP; Google Scholar; INSPEC; JournalTOCs; MediaFinder; The Standard Periodical Directory; Ulrich's Periodicals Directory