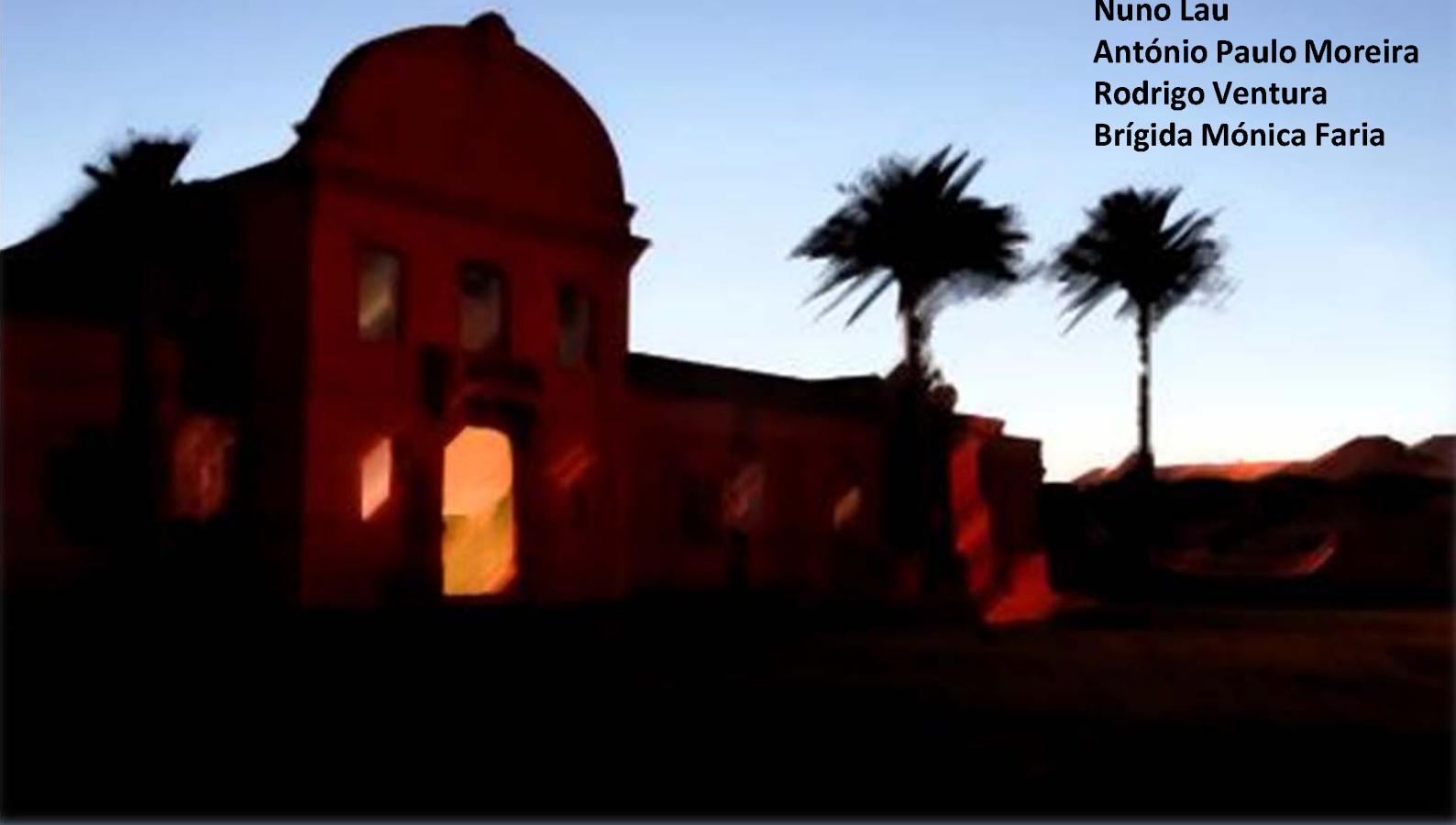




2014 IEEE International Conference on Autonomous Robot Systems and Competitions (ICARSC)

**14-15 May, 2014
Espinho, Portugal**

**Editors:
Nuno Lau
António Paulo Moreira
Rodrigo Ventura
Brígida Mónica Faria**



ISBN: 978-1-4799-4254-1 (XPLORE COMPLIANT), 978-1-4799-4255-8 (USB)

IEEE Catalog Numbers: CFP1482X-ART, CFP1482X-USB



2014 IEEE International Conference on Autonomous Robot Systems and Competitions (ICARSC)

Edited by:

Nuno Lau, António Paulo Moreira, Rodrigo Ventura, Brígida Mónica Faria

May 14-15, 2014

Espinho, Portugal

USB ISBN: 978-1-4799-4255-8

USB IEEE Catalog Number: CFP1482X-USB

XPLORE COMPLIANT ISBN: 978-1-4799-4254-1

XPLORE COMPLIANT IEEE Catalog Number: CFP1482X-ART



Title: 2014 IEEE International Conference on Autonomous Robot Systems and Competitions (ICARSC)

Editors: Nuno Lau, António Paulo Moreira, Rodrigo Ventura, Brígida Mónica Faria

USB ISBN: 978-1-4799-4255-8

USB IEEE Catalog Number: CFP1482X-USB

XPLORE COMPLIANT ISBN: 978-1-4799-4245-1

XPLORE COMPLIANT IEEE Catalog Number: CFP1482X-ART

Copyright ©2014 by the Institute of Electrical and Electronics Engineers, Inc. All rights reserved.

Copyright and Reprint Permission: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For reprint or republication permission, email to IEEE Copyrights Manager at pubs-permissions@ieee.org.

All rights reserved. Copyright ©2014 by IEEE.

Sponsors:



Patrons:



Institutions:



Welcome Message

Welcome to the 2014 IEEE International Conference on Autonomous Robot Systems and Competitions - ICARSC and to the Museu Municipal de Espinho and Fórum de Arte e Cultura de Espinho in Portugal.

This is the 2014's edition of the international scientific meeting integrated in the Portuguese Robotics Open (Festival Nacional de Robótica - Robotica 2014), a RoboCup local event. The conference has been growing continuously for the past decade and is nowadays a truly international forum attracting quality research papers from worldwide. This scientific meeting is, for the first time, an IEEE conference with proceedings indexed in IEEEExplore and Scopus. It aims to disseminate the most advanced knowledge and to promote discussion of theories, methods and experiences in areas of relevance to the knowledge domains of Mobile Robotics and Robotic Competitions.

A total of 87 papers, including authors from 25 countries and covering all conference topics, were submitted in response to the call for contributions. After a double blind review process, in which all papers had at least 3 independent reviews, 34 papers have been accepted as regular papers for oral presentation and 22 papers have been accepted for short presentation plus poster presentation. The best papers will be selected to be published as an extended version in the Journal of Intelligent & Robotic Systems from Springer, indexed by Thomson ISI Web of Knowledge (IF=0.83). All accepted contributions are included in the proceedings book. The conference program also includes a keynote speaker, Prof. Dr. Marco Dorigo, from the Université Libre de Bruxelles, Belgium, where he is also the co-director of the IRIDIA lab.

The conference is Sponsored by the Sociedade Portuguesa de Robótica (SPR), IEEE Portugal Section, IEEE Portugal Section RA Chapter and has the Technical Co-Sponsorship of IEEE Robotics and Automation Society.

We would like to thank the invaluable contribution of the Conference Patrons, Caixa Geral de Depósitos, Câmara Municipal de Espinho, Museu Municipal de Espinho and Solverde - Casinos e Hotéis, as well as Sponsors, Steering Committee Members, International Program Committee Members, External Reviewers, Keynote Speaker, Sessions Chairs and Authors. We also thank and appreciate the collaboration of Carlos Amorim from Escola Secundária Profissional de Espinho in managing the registrations, the corresponding fees payment and other financial issues. We thank EasyChair for their Conference Management System, which was freely used for managing the paper submission and evaluation processes of ICARSC'2014.

Thank you all for participating in this conference hoping you enjoy and feel it as a highly productive and sociable event.

Nuno Lau
António Paulo Moreira
Rodrigo Ventura
Brígida Mónica Faria