

Carmelo R. García · Pino Caballero-Gil  
Mike Burmester · Alexis Quesada-Arencibia (Eds.)

# Ubiquitous Computing and Ambient Intelligence

10th International Conference, UCAmI 2016  
San Bartolomé de Tirajana, Gran Canaria, Spain,  
November 29 – December 2, 2016  
Proceedings, Part I

*Editors*

Carmelo R. García  
University of Las Palmas de Gran Canaria  
Las Palmas  
Spain

Mike Burmester  
Florida State University  
Tallahassee, FL  
USA

Pino Caballero-Gil  
Departamento de Estadística  
Universidad La Laguna  
La Laguna  
Spain

Alexis Quesada-Arencia  
University of Las Palmas de Gran Canaria  
Las Palmas  
Spain

ISSN 0302-9743

ISSN 1611-3349 (electronic)

Lecture Notes in Computer Science

ISBN 978-3-319-48745-8

ISBN 978-3-319-48746-5 (eBook)

DOI 10.1007/978-3-319-48746-5

Library of Congress Control Number: 2016955505

LNCS Sublibrary: SL3 – Information Systems and Applications, incl. Internet/Web, and HCI

© Springer International Publishing AG 2016

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made.

Printed on acid-free paper

This Springer imprint is published by Springer Nature

The registered company is Springer International Publishing AG

The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

# Preface

The UCAmI Conference brings together the fields of ubiquitous computing (UC), which is defined as the integration of human factors, computer science, engineering and social sciences, with a paradigm built upon UC, called ambient intelligence (AmI), which refers to sensitive electronic environments responsive to the presence of people. Thus, altogether, the core of the conference is a complete notion that mutually inspires UC and AmI. In particular, UCAmI 2016 focused on research topics related to ambient assisted living, Internet of Things, smart cities, ambient intelligence for health, human-computer interaction, ad hoc and sensor networks, and security.

This year we celebrated in Gran Canaria, Canary Islands, Spain, the 10th International Conference on Ubiquitous Computing and Ambient Intelligence (UCAmI 2016), which included the International Work Conference on Ambient Assisted Living (IWAAL), and the International Conference on Ambient Intelligence for Health (AmIHEALTH). The program of this joint event included a rich variety of technical sessions to cover the most relevant research topics of each conference. Since its first meeting back in 2005 the event has grown significantly, as shown by its increasing number of participants. For UCAmI 2016, a total of 145 submissions were received, and the acceptance rate for long papers and doctoral consortium papers was 51 %. All submissions were peer reviewed by at least three members of the Program Committee. The reviewers' comments and recommendations were taken into consideration while selecting submissions for inclusion in the proceedings, and were communicated to the authors. Authors whose manuscripts were accepted were asked to address the reviewers' comments. We would like to thank all the authors who submitted their work for consideration and also the reviewers for providing their detailed and constructive reviews in a timely manner.

Furthermore, in an effort to increase the visibility of the contributions of UCAmI, selected papers were invited for submission as extended versions in the journals: *Sensors*, *Mobile Information Systems*, *Journal of Ambient Intelligence and Humanized Computing*, and *International Journal of Computational Intelligence Systems*. We would like to thank the distinguished editors of these journals for providing us with these opportunities.

Finally, we would like to thank all organizers (i.e., University of Las Palmas de Gran Canaria and MAmI Research group), and the reviewers (members of the Program Committee) for helping us by contributing to a high-quality event and proceedings book on the topics of ubiquitous computing and ambient intelligence. Special thanks are due to the staff of Springer in Heidelberg for their valuable support.

November 2016

Carmelo R. García  
Pino Caballero-Gil  
Mike Burmester  
Alexis Quesada