

TEEM 2019 Preface

Dear readers,

This book gathers the works carried out by an important number of researchers in the context of TEEM Conference 2019. The seventh edition of this International Conference on Technological Ecosystem for Enhancing Multiculturality – TEEM, as every two years, takes place outside its birth home, Salamanca. This year TEEM takes place at León (North West of Spain), organized by the Robotics research group of the University of León, that this year is celebrating its 40 anniversary [1].

Since the first edition in 2013, TEEM conference has grown with the aim of developing a research community around the application of ICT in different fields towards to contribute in the Knowledge Society [2]. This goal is achieved thanks to researchers from different areas and always keeping in mind the idea of a conference where Ph.D students can evolve [3-9], by posing their works, exchanging ideas with their peers and being mentored by other researchers all over the world. In addition, the conference will consider other stakeholders of the research landscape as research projects and companies.

TEEM Conference has grown in both quality and quantity of research works. The first and second edition were held at Salamanca with 83 and 102 accepted full papers and several special issues published in well-ranked journals [10-25]. After that, the conference took place out of Salamanca, at Porto (Portugal), beginning a sequence that has a hosting institution one year and the next one returns to Salamanca. The third edition published 90 full papers with some associated journals [26-29]. In the fourth edition (2016) the number of contributions grew up reaching 165 accepted papers (from 235 submissions) and several journals [30, 31]. In 2017 the conference was hold at Cadiz with 84 accepted papers over 109 submissions and also a special issue [32]. TEEM 2018, the last edition, was held in Salamanca with 151 full papers accepted from the 243 submissions received, it has three special issues associated in different journals [33-35]. The present edition has had 215 submission from which 148 full papers were accepted, that is, there is a 31,17% rejection rate. These papers have involved 468 authors from 29 countries. TEEM2019 has 8 special issues associated in journals and it is structured in the following topics:

- Track 1. Computational thinking and robotics in education
- Track 2. Engineering Education addressing Professional Challenges
- Track 3. Evaluation in education and guidance
- Track 4. Bridging the diversity gap in STEM
- Track 5. Learning Analytics: The End of the Beginning
- Track 6. Merging new Technologies with Health Sciences Education and Practice
- Track 7. Advances on Sustainable Development in Higher Education
- Track 8. Implementation of Qualitative and Mixed Methods Researches
- Track 9. Supercomputing education: Thinking in parallel
- Track 10. Teacher Education for ICT integration in classroom
- Track 11. Smart Learning
- Track 12. Educational Innovation
- Track 13. Uncertainty in Digital Humanities
- Track 14. 10th International Workshop on Software Engineering for E-learning (ISELEAR'19)
- Track 15. Communication, Education and Social Media
- Track 16. Doctoral Consortium

Most of these topics have being explored in the different conference editions and tracks change each year, this year two new initiatives have been very welcome. These are track 4, regarding the diversity in STEM and track 9, that deals with the use of Supercomputers in education. It should be also noted that, as in other editions, results from several projects are presented during the conference, such as H2020 WYRED project (netWorked Youth Research for Empowerment in the Digital society) [36-39] or the RoboSTEAM Erasmus Project [40].

We would like to thank the authors attending the conference because we learned from you as much you learned from us; the steering and scientific committees for their work and suggestions; the track chairs for their effort attending to authors and checking that everything is right in their tracks; the sponsors for their products and economic support, and specially the Robotics and GRIAL Research groups teams for supporting the conference process. Also, it is necessary to mention the University of León and ACM for helping us in this amazing experience. We hope to see you all next year in Salamanca again.

Miguel Á. Conde, Francisco J. Rodríguez-Sedano, Camino Fernández-Llamas and Francisco J. García-Peñalvo (coeditors of TEEM2019 Proceedings)

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