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Advanced Research in Technologies, Information, Innovation and Sustainability

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Proceedings

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Preface

New digital evolution and transformation trends are enabling communication and ubiquitous computing between global citizens, industry, organizations, networked machines, and physical objects, providing a promising vision of the future integrating the real world of knowledge agents and things with the virtual world of information.

The current reality and the future of computing and communications are supported by a dynamic technological evolution in many fields, from wireless sensors and networks to nanotechnology.

Due to its broad impact in many fields, it has rapidly gained global attention from academia, governments, industry, and the general public. This change in the network of agencies profoundly modifies the landscape of human activity, particularly as regards knowledge acquisition and production, offering new possibilities but also challenges that need to be explored and assessed.

This book contains a selection of papers accepted for presentation and discussion at the International Conference on Advanced Research in Technologies, Information, Innovation, and Sustainability (ARTIIS 2021).

ARTIIS is an international forum for researchers and practitioners to present and discuss the most recent innovations, trends, results, experiences, and concerns from the perspectives of technologies, information, innovation, and sustainability.

The first edition of ARTIIS was realized this year, and it was a success. We received 155 contributions from authors in 37 countries around the world. The acceptance rate was 35.48%, with 53 regular papers and 2 short papers selected for presentation at the conference.

This conference had the support of the CIST Research and Innovation Center of Universidad Estatal Peninsula de Santa Elena, Ecuador, and the Algoritmi Research Center of the University of Minho, Portugal. It was realized in a hybrid format, taking place both online and in person at the Santa Elena Peninsula, Salinas, Ecuador, during November 25–27, 2021.

The Program Committee was composed of a multidisciplinary group of more than 122 experts from 25 countries, with the responsibility of evaluating, in a ‘double-blind review’ process, the chapters received for each of the main themes proposed for the conference: Computing Solutions, Data Intelligence, Ethics, Security, and Privacy and Sustainability.

- Computing Solutions addresses the development of applications and platforms involving computing for some area of knowledge or society. It includes topics like networks, pervasive computing, gamification, and software engineering.
- Data Intelligence focuses on data (e.g., text, images) acquisition and processing using smart techniques or tools. It includes topics like computing intelligence, artificial intelligence, data science, and computer vision.

- Ethics, Security, and Privacy considers a more strict and secure area of information systems where the end-user is the main concern. Vulnerabilities, data privacy, and cybersecurity are the main subjects of this topic.
- Sustainability explores a new type of computing which is more green, connected, efficient, and sustainable. Topics like immersive technology, smart cities, and sustainable infrastructure are part of this chapter.

The papers accepted are published in this volume in the Communications in Computer and Information Science series (CCIS), which is indexed in DBLP, Google Scholar, EI-Compendex, SCImago, and Scopus. CCIS volumes are also submitted for inclusion in ISI Proceedings.

ARTIIS 2021 included several special sessions held in parallel with the conference. These special sessions were as follows: ACMaSDA 2021 – Applications of Computational Mathematics to Simulation and Data Analysis; CICITE 2021 – Challenges and the Impact of Communication and Information Technologies on Education; ISHMC 2021 – Intelligent Systems for Health and Medical Care; IWEBTM 2021 – International Workshop on Economics, Business, and Technology Management; IWET 2021 – International Workshop on Electronic and Telecommunications; TechDiComM 2021 – Technological Strategies on Digital Communication and Marketing; and RTNT 2021 – Boost Tourism using New Technologies.

We acknowledge all of those who contributed to this book: authors, organizing chairs, the steering committee, the Program Committee, special sessions chairs, and editors. We deeply appreciate their involvement and support, which were crucial for the success of the International Conference on Advanced Research in Technologies, Information, Innovation, and Sustainability (ARTIIS 2021).

The success of this first edition gives us a lot of confidence to continue the work. So, we hope to see you in the second edition in 2022.

November 2021

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