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ICT for Health, Accessibility and Wellbeing


First International Conference, IHAW 2021
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Revised Selected Papers

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Preface

The UN Convention on the Rights of Persons with Disabilities (PwDs), Article 9, defines Information and Communication Technology (ICT) accessibility as an important part of accessibility rights [1]. The World Health Organisation (WHO) estimates that over one billion people live with some form of disability, and in developing nations infirmity and disabilities are real drivers of exclusion and poverty [2]. Moreover, as stated by the WHO, the number of people experiencing disability is dramatically increasing due to demographic trends and increases in chronic health conditions, among other causes [2]. In addition, people with disabilities are disproportionately affected during the COVID-19 pandemic.

ICTs have a crucial role to play. In fact, making technologies and services accessible is not merely a basic human right, but ICTs have the potential to bring a real difference to the quality of life of people living with difficult or debilitating conditions or disabilities. ICTs are advancing exponentially, while the cost is plummeting. Nevertheless, health care demand is rising, accessible technologies and services are required, and the costs continue to rise. This calls for additional research and adoption of technologies that can help to meet these challenges, since ICT for health, accessibility, and wellbeing still continues to lag behind other applications.

There is a need for the design, implementation, user-centered evaluation, and standardization of new and future inclusive and sustainable technologies that benefit all: healthy people, people with disabilities or other impairments, people with chronic diseases, etc. This calls for multi- and interdisciplinary research involving the interplay between ICTs and biomedical, neurocognitive, and experimental research, which puts users with disabilities at the epicenter and aims to engage in a co-creation and co-design approach. Specifically, the focus should be placed on user-oriented design and innovation, as well as user-centered evaluation. New intuitive ways of human-computer interaction (e.g., augmented and virtual reality, natural language processing) and user feedback and acceptance are among the primary factors that need to be examined in order to propose more intuitive and user-tailored ICT solutions.

Therefore, the proceedings of the first International Conference on ICT for Health, Accessibility and Wellbeing (IC-IHAW 2021) present state-of-the-art multi- and interdisciplinary research in this field. We would like to applaud the steering committee, Michal Bujacz, George A. Papadopoulos, Edwige Pissaloux, and Ramiro Velázquez for helping us to assemble and organize a number of high-quality and diverse papers on topics such as active aging, assistive devices and systems, brain functions support, and ICT and wellbeing. This very exciting volume promises to deliver to the readers a broad view of how ICTs can be applied for addressing challenges in terms of health, accessibility, and wellbeing, with accepted papers that showcase research and development of different ICTs and their application in various end-user domains, e.g., older adults, people with dementia, stroke patients.

Part of the series “ICT for Societal Challenges”, the IC-IHAW 2021 conference brought together academics, industry experts, and education leaders from all over the world to discuss an incredibly wide array of topics, ranging from machine learning, robotics, and augmented reality to natural language processing, to address problems related to health and disability.

The conference received a total of 36 papers, and the submitting authors originated from 26 countries from all parts of the globe with the Europe, Middle East, and Africa (EMEA) region ranking first with 69% of submissions, the Asia-Pacific Region ranking second with 15%, and the rest being from North and Latin America. From the submitted papers, 12 full papers and seven short papers were accepted for presentation and publication in this Springer conference proceedings, yielding an acceptance rate of 33.3% for full papers. Every paper went through a rigorous review process, in which each paper received at least two expert reviews, with most of the papers receiving more than three reviews.

The technical program of IC-IHAW 2021 consisted of six sessions: Active Ageing, Brain Functions Support (two sessions), ICT & Wellbeing (two sessions), and Assistive Devices & Systems during which 19 papers were presented (12 full papers and 7 short papers) at the virtual event.

We would like to thank everyone involved in the conference for helping to make it a success.

November 2021

Med-Salim Bouhlef
Achilleas Achilleos

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2. <https://www.who.int/news-room/fact-sheets/detail/disability-and-health>

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