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Vincent Gremeaux-Bader ·
Kamiar Aminian
Editors

Human Interaction, Emerging Technologies and Future Applications II

Proceedings of the 2nd International
Conference on Human Interaction
and Emerging Technologies: Future
Applications (IHIET – AI 2020),
April 23–25, 2020, Lausanne, Switzerland

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Preface

This book, entitled *Human Interaction and Emerging Technologies II: Future Applications*, aims to provide a global forum for presenting and discussing novel human interaction, emerging technologies and engineering approaches, tools, methodologies, techniques, and solutions for integrating people, concepts, trends, and applications in all areas of human interaction endeavor. Such applications include, but are not limited to, health care and medicine, sports medicine, transportation, optimization, and urban planning for infrastructure development, manufacturing, social development, a new generation of service systems, as well as safety, risk assessment, and cybersecurity in both civilian and military contexts. Indeed, rapid progress in developments in cognitive computing, modeling, and simulation, as well as smart sensor technology, will have a profound effect on the principles of human interaction and emerging technologies at both the individual and societal levels in the near future. This interdisciplinary book will also expand the boundaries of the current state-of-the-art by investigating the pervasive complexity that underlies the most profound problems facing contemporary society today. Emerging technologies included in this book cover a variety of technologies such as educational technology, information technology, nanotechnology, biotechnology, cognitive science, robotics, and artificial intelligence.

The book, which gathers selected papers presented at the 2nd International Conference on Human Interaction and Emerging Technologies: Future Applications (IHiet—AI 2020), April 23–25, 2020, Lausanne, Switzerland, focuses on advancing the theory and applications for human interaction requirements as part of an overall system development life cycle, by adopting a human-centered design approach that utilizes and expands on the current knowledge of user-centered design and systems engineering supported by cognitive software and engineering, data analytics, simulation and modeling, and next generation visualizations. This book also presents many innovative studies with a particular emphasis on the development of technology throughout the life cycle development process, including the consideration of user experience in the design of human interfaces for virtual, augmented, and mixed reality applications.

Reflecting on the above-outlined perspective, the papers contained in this volume are organized into nine sections, including

- Section 1 Human-centered Design
- Section 2 Artificial Intelligence and Computing
- Section 3 Human–computer Interaction
- Section 4 Augmented, Virtual, and Mixed Reality Simulation
- Section 5 Applications in Sport and Medicine
- Section 6 Healthcare and Medical Applications
- Section 7 Human Technology and Future of Work
- Section 8 Management, Training, and Business Applications

We would like to extend our sincere thanks to the Centre Hospitalier Universitaire Vaudois (CHUV) in Lausanne, Switzerland, for their collaboration and kind support. Our appreciation also goes to the members of the Scientific Program Advisory Board who have reviewed the accepted papers that are presented in this volume.

We hope that this book, which presents the current state-of-the-art in human interaction and emerging technologies, will be a valuable source of both theoretical and applied knowledge enabling the human-centered design and applications of a variety of products, services, and systems for their safe, effective, and pleasurable use by people around the world.

April 2020

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