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Francisco Rebelo · Marcelo Soares
Editors

Advances in Ergonomics in Design

Proceedings of the AHFE 2020 Virtual
Conference on Ergonomics in Design,
July 16–20, 2020, USA

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Advances in Human Factors and Ergonomics 2020

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11th International Conference on Applied Human Factors and Ergonomics and the
Affiliated Conferences

Proceedings of the AHFE 2020 Virtual Conference on Ergonomics in Design,
July 16–20, 2020, USA

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Preface

Successful interaction with products, tools and technologies depends on usable designs and accommodating the needs of potential users without requiring costly training. In this context, this book is concerned with emerging ergonomics in design concepts, theories and applications of human factors' knowledge focusing on the discovery, design and understanding of human interaction and usability issues with products and systems for their improvement.

This book will be of special value to a large variety of professionals, researchers and students in the broad field of human modeling and performance who are interested in feedback of devices' interfaces (visual and haptic), virtual reality, user-centered design, design for special populations, particularly the elderly and assistive technology. We hope this book is informative—but even more—that it is thought provoking. We hope it inspires, leading the reader to contemplate other questions, applications and potential solutions in creating good designs for all.

This book is organized into eight sections focusing on the following subject matters: *Design Methods, User Interfaces and Interaction Design, Information, Design and Visualization Education and Gamification, Tools, Equipment and Space Design*

In the sections that cover Design Methods, User Interfaces and Interaction Design, the focus goes to the limits and capabilities. Generally, the effect of changes in force and kinematics, physiology, cognitive performance, in the design of consumer products, tools and workplaces is discussed. The sections that cover Education and Gamification, Product and Design Evaluation and Sustainable Design employ a variety of research methods and user-centered evaluation approaches, for developing products that can improve safety and human performance and at same time, the efficiency of the system.

- Section 1 Design and User Involvement*
- Section 2 Design Strategies and Innovation*
- Section 3 Design for Visibility and Comfort*
- Section 4 Anthropometric Design*
- Section 5 Editorial and Typographic Studies*

Section 6 Design for Behavior Change

Section 7 Education and Gamification

Section 8 Tools, Equipment and Space Design

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July 2020

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