Advances in

Ergonomics In Design, Usability & Special Populations

Part I

Advances in Human Factors and Ergonomics 2014

5th International Conference on Applied Human Factors and Ergonomics

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Edited By

Marcelo Soares
and
Francisco Rebelo

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Table of Contents

Section 3: Interface Design I

Section 4: Human Factors Applications

Section 5: Design and Human Behavior I

Section 6: The Role and Functions of Professional Certification Organizations

Section 7: Design and Applied Anthropometry I

Section 13: Interface Design II

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), user-centered design, and design for special populations, particularly the elderly. 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.

The book is organized into three volumes with a total of thirty-eight sections that focus on the following subject matters: Devices and user interfaces, Virtual Reality and Digital Environment , User Studies, Product Design and Evaluation, and Sustainable Design. In the sections that cover "Devices and user interfaces" the focus is on optimization of user devices, with emphasis on visual and haptic feedback. In the sections that cover "User studies," the focus goes to the limits and capabilities of special populations, particularly the elderly, which can influence the design. 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 "Virtual Reality and Digital Environment", "Product and design evaluation" and "Sustainable design" employs 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. Usability evaluations are reported for different kinds of products and technologies.

Part I:

Section 1: Human Factors and Ergonomics in Design of Safety-Critical Systems
Section 2: Sustainable Design I
Section 3: Interface Design I
Section 4: Human Factors Applications
Section 5: Design and Human Behavior I
Section 6: The Role and Functions of Professional Certification Organizations
Section 7: Design and Applied Anthropometry I
Section 8: Ergonomics in Design of Workstations I
Section 9: Virtual Reality and Digital Environment I
Section 10: Sustainable Design II
Section 11: Design and Human Behavior II
Section 12: Design and Applied Anthropometry II
Section 13: Interface Design II

Part II:

Section 14: User-Centered Design I
Section 15: Ergonomics in the Analysis and Design of Production Systems
Section 16: Ergonomics in the Automotive Industry

Section 17: Transportation Design
Section 18: Ergonomics in Design of Workstations II
Section 19: Virtual Reality and Digital Environment II
Section 20: Ergonomics, Product and Work Design I
Section 21: Interaction Design and Usability Evaluation
Section 22: Design Methods and Techniques
Section 23: Ergonomics and Product Design
Section 24: Ergonomics and Cognition in Aviation
Section 25: Seating Ergonomics and Body Posture
Section 26: Sustainable Design III
Section 27: Ergonomics, Product and Work Design II

Part III:

Section 28: Human Factors and Ergonomics in Information Design
Section 29: Product Design
Section 30: Ergonomics in the Design of Products and Services
Section 31: Ergonomics and Usability Evaluation
Section 32: Sustainable Design IV
Section 33: Ergonomics, Accessibility and Built Environment
Section 34: Sustainable Innovation
Section 35: Ergonomics and Design for Elderly People
Section 36: Assistive Technology
Section 37: Ergonomic Design in Healthcare and Childcare
Section 38: Design of Protective Clothing and Safety

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Marcelo Soares

Federal University of Pernambuco

Recife, Brazil

Francisco Rebelo

Centre for Architecture, Urban Planning and Design (CIAUD)

Ergonomics Laboratory, Faculdade de Motricidade Human

University of Lisbon

Lisbon, Portugal

Editors