Advances in Intelligent Systems and Computing

Volume 793

Series editor

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Beata Mrugalska · Massimo Di Nicolantonio
Emilio Rossi
Editors

Advances in Manufacturing, Production Management and Process Control

Joint proceedings of the AHFE 2018 International Conference on Advanced Production Management and Process Control, the AHFE International Conference on Human Aspects of Advanced Manufacturing, and the AHFE International Conference on Additive Manufacturing, Modeling Systems and 3D Prototyping, July 21–25, 2018, Loews Sapphire Falls Resort at Universal Studios, Orlando, Florida, USA

Springer

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ISSN 2194-5357 ISSN 2194-5365 (electronic)
Advances in Intelligent Systems and Computing
ISBN 978-3-319-94195-0 ISBN 978-3-319-94196-7 (eBook)
https://doi.org/10.1007/978-3-319-94196-7

Library of Congress Control Number: 2018947365

Printed on acid-free paper

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Advances in Human Factors and Ergonomics 2018

AHFE 2018 Series Editors

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9th International Conference on Applied Human Factors and Ergonomics and the Affiliated Conferences

Proceedings of the AHFE 2018 International Conferences on The Human Aspects of Advanced Manufacturing, Advanced Production Management and Process Control, and Additive Manufacturing, Modeling Systems and 3D Prototyping, held on July 21–25, 2018, in Loews Sapphire Falls Resort at Universal Studios, Orlando, Florida, USA

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Advances in Usability, User Experience and Assistive Technology	*Tareq Z. Ahram and Christianne Falcão*
Advances in Human Factors in Wearable Technologies and Game Design	*Tareq Z. Ahram*
Advances in Human Factors in Communication of Design	*Amic G. Ho*

Preface

Contemporary manufacturing enterprises aim to deliver a great number of consumer products and systems through friendly and satisfying working environments for people who are involved in manufacturing services. Human-centered design factors, which strongly affect manufacturing processes, as well as the potential end users are crucial for achieving continuous progress in this respect. Researchers around the world attempt to improve the quality of consumer products and working environments. The AHFE International Conference on Advanced Production Management and Process Control (APMPC) promotes the exchange of ideas and developments in production, sustainability, life cycle, innovation, development, fault diagnostics, and control systems. It addresses a spectrum of theoretical and practical topics. It provides an excellent forum of exploring frontiers between researchers and practitioners from academia and industry. It offers the possibility of discussing research results, innovative applications, and future directions. The AHFE International Conference on Additive Manufacturing, Modeling Systems and 3D Prototyping focused on cutting-edge design and manufacturing processes; it welcomes papers that cover articles, case studies, and multidisciplinary studies specifically focused on ergonomics research, design applications, engineering processes, experimental purposes, and theoretical methods applied the themes of Digital Modeling Systems, Additive Manufacturing, and their cross-sectional convergences.

This book presents the results of their work. We believe that such findings can either inspire or support others in the field of manufacturing and process control to advance their designs and implement them into practice. Therefore, this book is addressed to both researchers and practitioners.

The papers presented in this book have been arranged into eight sections.

I. Human Aspects of Advanced Manufacturing and Production Planning
II. Human Factors in Complex and Large-Scale Manufacturing Systems
III. Development and Implementation of Human Knowledge
IV. 2D/3D Digital Modeling
V. Applications for 3D Printing

VI. Safety Analysis and Process Control
VII. Applications in Industrial Processes: Work Stress and Cognitive Evaluation
VIII. Approaches and Methods for Production Management

The presented chapters depict the influence of worker experience and the technology used to improve work effectiveness. Next, the comparison of non-expert and expert work is studied to find patterns that can be used to improve the technique of performing different tasks by less skilled employees. The third section deals with outcomes ergonomics have on industrial quality and safety, while the fourth and final section of this book is focused on ergonomic design of future production systems.

The contents of this book required the dedicated effort of many people. We would like to thank the authors, whose research and development efforts are published here. Finally, we also wish to thank the following Editorial Board members for their diligence and expertise in selecting and reviewing the presented papers:

Advanced Manufacturing

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July 2018

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