

Contents

Part I Applied Design, Modeling and Usability Evaluation I

Evaluation of a Real-Time Feedback Solution for Ergonomic Parameters Using Smart Sensors and User Centered Design	3
Timm Römer, Christopher Stockinger and Lukas Bier	
Application Development for Gathering “Inexperienced UX” Data for Planning Next-Generation Products	15
Tomohiro Mori and Miwa Nakanishi	
Study on Bottom Somatotypes Characteristics and Differences of Female Youths from Liaoning Province and Guangdong Province in China	27
Jing Zhou and Xiaoping Hu	
Analysis of Back Forces While Sitting Down, Seated, and Rising from a Stationary Chair in Subjects Weighing 136–186 kg	39
Lingling Hu, Onder Tor, Jilei Zhang, Bob Tackett and Xiaohong Yu	
User Participation in the Design of Cockpit Interfaces	51
Ulrika Ohlander, Jens Alfredson, Maria Riveiro and Göran Falkman	
Development and Evaluation of Packaging Prototypes in a Teaching Context of Ergonomic Design: A Didactic Experience	59
Gabriel Bonfim, Fausto Medola and Luis Paschoarelli	
Usability in the Development of Packaging Design: Complementing the Subjective Evaluation	67
Gabriel Bonfim, Fausto Medola and Luis Paschoarelli	
Integrating UCD and an Agile Methodology in the Development of a Mobile Catalog of Plants	75
Maria Aguilar and Claudia Zapata	

Collecting Data of SNS User Behavior to Detect Symptoms of Excessive Usage: Development of Data Collection Application.	89
Ploypailin Intapong, Tiranee Achalakul and Michiko Ohkura	
 Part II Applied Design, Modeling and Usability Evaluation II	
Seamless User Analysis with Integrated User Models in a Usability Engineering Repository	103
Anna Hüttig and Michael Herczeg	
The meCUE Questionnaire: A Modular Tool for Measuring User Experience	115
Michael Minge, Manfred Thüring, Ingmar Wagner and Carina V. Kuhr	
The Hierarchical Model of Spatial Orientation Task in a Multi-module Space Station	129
Junpeng Guo, Guohua Jiang, Yuqing Liu and Yu Tian	
Aid for the User-Centered Evaluation of Human Machine Interfaces During Ramp-up of Socio-Cyber-Physical Production Systems.	139
Ina Heine, Patrick Beaujean and Robert Schmitt	
Redesign of a Laboratory Website Using User Centered Design Method and WEBUSE	153
Siti Kurniasih, Andrie Pasca Hendradewa, Amarria Dila Sari and Muhammad Ragil Suryoputro	
Guidelines and Best Practices for Open Source Transit Trip Planning Interfaces	163
Lisa Jo Elliott, Marvin Valarezo, Cody Freeman, Matthew Scott and Michael Moore	
Quantifying Visual Attention—Modeling Effects of Object Size.	173
Haruka Yoshida, Azusa Furukawa, Teruya Ikegami, Shin'ichi Fukuzumi and Kazuo Furuta	
Usability Testing of an Online Farming Investment Website	189
Alyssa Jean A. Portus and Paul Jason C. Flores	
Effect of Position: An Ergonomics Evaluation of Police's Wearable Equipment	199
Adedapo Ilori, Yueqing Li, Vishnu Mahesh and Brian Craig	
Relationship Between the Complexity of System Functions and Amount of Displayed Information on a Mobile Device with Touch Display.	209
Suguru Ito, Masahiko Sakata, Munenori Koga, Daisuke Iizawa and Miwa Nakanishi	

Methodology of Digital Firearm Ergonomic Design	221
Marek Bures, Tomas Görner, Antonin Miller and Martin Kaba	
<i>Inspædia</i>: [Almost] Everything About Simplicity, Playfulness and Inspiration	231
Paulo Maldonado, Fábio Teixeira, José Pinto Duarte, António Câmara, Nuno Correia, Leonor Ferrão, Pablo Ermida and Maria Passos	
Human-Computer Interaction in Sanitary Inspection Simulation Exercises	245
Robert Waszkowski, Tadeusz Nowicki and Anna Saniuk	
Quantifying the Effects of Reduced Update Rate on Motor Performance and User Experience	255
Sung Hun Sim, Bing Wu, Kyle Brady, Andinet Enquobahrie, Ricardo Ortiz and Sreekanth Arikatla	
Modeling Reduced User Experience Caused by Visual Latency	267
Kyle Brady, Bing Wu, Sung Hun Sim, Andinet Enquobahrie, Ricardo Ortiz and Sreekanth Arikatla	
How Do Needs and Preferences of a User, Match the Settings of the Interfaces They Use.	279
Eleni Chalkia, Evangelos Bekiaris and Ignacio Lopez Madrid	
Ergonomics in Clothing: Importance of Thermal Comfort in a Typical Brazilian Refrigerator of Beef Industry	291
Maricielo Well Quispe Núñez, Iracimara de Anchieta Messias and Carolina Lotufo Bartholomei	
Part III Ergonomics and Design for All	
Impact of Advance Fabrics on Human Biomechanics: Example of Anti-fatigue Mats	301
Redha Taiar, Tareq Z. Ahram, Nicolas Gardan, Alexandre Schneider and Dimitra Sifaki-Pistolla	
Evaluating Usability of a Battery Swap Station for Electric Two Wheelers.	315
Fei-Hui Huang	
System Acceptability Evaluation of Battery Swapping System for Electric Two Wheelers.	325
Fei-Hui Huang	
Building an Inclusive Ecosystem for Developers and Users: The Role of Value Propositions	339
Katerina Toulou and Evangelos Bekiaris	

A Taiwanese User Experience Questionnaire	347
Yu-Hung Chien, Wen-Te Chang, Ching-Chang Chuang and Shun-Han Chen	
Gesture Preference with Horizontal and Vertical Multi-touch Devices	357
Robert Regal, Joshua Gomer and Kristin Moore	
Ergonomic Evaluation of Refrigerating Chamber Volume of Refrigerator	367
Huimin Hu, Ling Luo, Aixian Li, Linghua Ran, Hong Luo, Xin Zhang and Chaoyi Zhao	
Managing Variations in Process Control: An Overview of Sources and Degradation Methods.	377
Beata Mrugalska and Tareq Ahram	
Part IV Ergonomics and Environmental Design	
Experimental Study on Thermal Comfort of Indoor Environment.	391
Huimin Hu, Rui Wang, Chaoyi Zhao, Hong Luo, Li Ding and Yifen Qiu	
Ergonomic Assessment of Environmental Conditions in Public Elementary School Classrooms in Quezon City, Philippines	403
Cyndi Marie De Guzman, Alessandra Fajardo, Francis Miguel Hubag and Benette Custodio	
Practical Urban: The Urban Furniture and Its Relationship with the City	413
Amilton Arruda, Isabela Moroni, Pablo Bezerra, Paulo Silva and Rodrigo Balestra F. de Paiva	
Part V Ergonomic Design, Assistive Technology and Accessibility	
Colors in 3D.	427
Lucia Regina Branco	
Palmar Pressure and Perception of Discomfort in the Use of Axillary Crutches	437
Gabriel Bonfim, Danilo Silva, Erica Neves, João Plácido, Ana Mantova, Fausto Medola and Luís Paschoarelli	
Design and Development of a Low-Cost Prosthesis Directed to the Activity with a Gasoline Brush Cutter: A Case Study	451
Daniel Ferrari, Gabriel Bonfim, Raphael Oliveira, Luis Paschoarelli and João Santos	

Aspects of the National Catalogue of Assistive Technology Products of the Ministry of Science, Technology and Innovation in Brazil: A Survey on the Degree of Knowledge of the Catalog	461
Roberta Lucas Scatolim, João Eduardo Guarnetti dos Santos, Paula da Cruz Landim, Silvia Cristina Mazaro Fermino and Denise Cardozo	
Development of a Device for the Aid in Locomotion Child with Physical Disabilities	471
Márcio Catapan, Raquel Venancio and Maria Lucia Okimoto	
Designing Accessible Course Registration for Users with Visual Impairments	481
Tanaya Joshi and Young Mi Choi	
Augmented Reality Based Social Stories Training System for Promoting the Social Skills of Children with Autism	495
Chi-Hsuan Chung and Chien-Hsu Chen	
The App Game Interface Design for Frozen Shoulder Rehabilitation	507
Chia-En Chung and Chien-Hsu Chen	
Usability Evaluation of Movement Support Service Robot for Elderly	517
Myung Kug Moon and Seon-Chil Kim	
Framework Interface Components for Accessibility Issues in E-Commerce	527
Plinio Thomaz Aquino Junior and Marcelo Piazza	
Development of Interactive System for Visually Impaired Using a Tactile Device	541
Kazuki Harada, Keisuke Usuda, Jose E. Oliveira, Juliene I.F. Moreira and Michiko Ohkura	
Part VI Interface Design and Usability Evaluation for Healthcare and Safety	
The Effect of Wearing Eyeglasses upon Postural Comfort Perception While Using Multi-tasking Electronic Devices in Sitting Position	551
Vito Todisco, Vito Clemente, Rosaria Califano and Mariarosaria Vallone	
Preliminary Study on the Evaluation of Musculoskeletal Risk of Static-Cycling Instructors Using Infrared Thermography	567
Blanca Flores, Orlando Susarrey, Amalia Yoguez, Claudia Gutiérrez and José Jiménez	

The Effect of Different Protection Level on Pilots’ Respiratory and Cardiovascular System 575
Hongjun Zhao, Hongyu Gu, Xiaopeng Liu, Li Ding and Huiting Qiao

Requirements’ Elicitation for a Tangible Interface-Based Educational Application for Visually Impaired Children 583
Asma Alhussayen, Rabia Jafri and Abir Benabid

Part VII Ergonomics Modeling for Industry

Interaction of Haptics, Acoustics and Optics in the Perception of Rotatory Control Devices 599
Tobias Glohr, Steffen Schynoll, Andreas Zimmermann and Thomas Maier

Conducting a Prospective Review for Enhanced Interface Features for Unmanned Ground Vehicle Operation 613
Teena M. Garrison, Leif T. Jensen, Lucas Cagle, John A. McGinley, Daniel W. Carruth, Cindy L. Bethel, Christopher T. Goodin and Phillip J. Durst

Physiological Responses Related to Visual Impressions of a Product: Evaluating Automobile Interior Design 621
Hidemaru Muto, Tsuneyuki Yamamoto, Naoki Kamiya and Miwa Nakanishi

A Method to Evaluate Consumer Desire for Continued Product Usage: Incorporation of the Method in the Automobile Design Process 635
Tadashi Yura, Tsuneyuki Yamamoto, Naoki Kamiya and Miwa Nakanishi

Design Requirements to Reduce Discomfort in Window Viewing: Study on Increasing Degrees of Freedom of Car-Body Shape 651
Kazuki Fujita and Miwa Nakanishi

Impact of an Augmented Reality System on Learning for Army Military Decision-Making Process (MDMP) Course 663
Chia-Chi Mao, Chien-Hsu Chen and Chung-Chong Sun

Advances in Ergonomics Modeling, Usability & Special
Populations

Proceedings of the AHFE 2016 International
Conference on Ergonomics Modeling, Usability &
Special Populations, July 27-31, 2016, Walt Disney
World®, Florida, USA

Soares, M.; Falcao, C.; Ahram, T. (Eds.)

2017, XIV, 671 p. 264 illus., 206 illus. in color.,
Softcover

ISBN: 978-3-319-41684-7