

Contents – Part II

Clinical and Health Information Systems

Mobile-Application Based Cognitive Behavior Therapy (CBT) for Identifying and Managing Depression and Anxiety.	3
<i>Siva Abhishek Addepally and Saptarshi Purkayastha</i>	
The Structure of Clinical Judgment Making Based on Nurse’s Visual Observation	13
<i>Shizuko Hayashi</i>	
Towards a Clinical Support System for the Early Diagnosis of Sepsis	23
<i>Tove Helldin, Anna-Karin Pernestig, and Diana Tilevik</i>	
APSEN: Pre-screening Tool for Sleep Apnea in a Home Environment.	36
<i>Varun Kanal, Maher Abujelala, Srujana Gattupalli, Vassilis Athitsos, and Fillia Makedon</i>	
Tacit Process for Obtaining Nursing Skills: Focusing on Nurse’s Sense of Patients Close to Death	52
<i>Jukai Maeda, Yasuko Kitajima, Masako Yamashita, and Yuki Tsuji</i>	
Conversion of JPG Image into DICOM Image Format with One Click Tagging.	61
<i>Olakunle Oladiran, Judy Gichoya, and Saptarshi Purkayastha</i>	
Eye Movement Differences Between Novices and Expert Surgeons in Laparoscopic Surgery Simulator	71
<i>Hisanori Shiomi, Kazuaki Yamashiro, Kouichirou Murakami, Hiroyuki Ohta, Tomoko Ota, Yuki Miyamoto, Yuka Takai, Akihiko Goto, Hiroyuki Hamada, and Masaji Tani</i>	
Evaluation Methods to Support Health Information Systems Development: A Framework Supported in Literature and Practical Experience	79
<i>Leonor Teixeira, Beatriz Sousa Santos, Vasco Saavedra, and Carlos Ferreira</i>	
Software Requirements Engineering in Digital Healthcare: A Case Study of the Diagnosis and Monitoring of Autism Spectrum Disorders in Children in the UK’s National Health Service.	91
<i>Catherine Tryfona, Tom Crick, Ana Calderon, and Simon Thorne</i>	

Compare the Receiver Operating Characteristic (ROC) and Linear Discriminant Analysis (LDA) for Acromegaly Detection by Three-Dimensional Facial Measurements 99
Ming-Hsu Wang, Bi-Hui Chen, and Wen-Ko Chiou

Evaluation of Functionality and Usability on Diabetes Mobile Applications: A Systematic Literature Review 108
Qing Ye, Suzanne A. Boren, Uzma Khan, and Min Soon Kim

Health and Aging

Abductive Cognitive Support for (Semantic) Dementia Persons. 119
Akinori Abe

Age and Computer Skill Level Difference in Aging-Centered Design: A Case Study of a Social Type Website. 132
Wen-Yu Chao, Qing-Xing Qu, Le Zhang, and Vincent G. Duffy

Application and Effect of Media Therapy to the Recreational Activities at Group Homes Reduction of Spiritual Pain of Elderly People with Dementia 142
Teruko Doi and Noriaki Kuwahara

Investigation of Quantification of the Suitable Photos for Conversation Assistance for Elderly and Youth 150
Miyuki Iwamoto, Noriaki Kuwahara, and Kazunari Morimoto

Generating Personalized Dialogue Towards Daily Counseling System for Home Dementia Care 161
Seiji Sakakibara, Sachio Saiki, Masahide Nakamura, and Kiyoshi Yasuda

Color Affects the Usability of Smart Phone Icon for the Elderly 173
Chunfa Sha, Rui Li, and Kai Chang

Capturing Activities of Daily Living for Elderly at Home Based on Environment Change and Speech Dialog 183
Kazunari Tamamizu, Seiji Sakakibara, Sachio Saiki, Masahide Nakamura, and Kiyoshi Yasuda

F0 Feature Analysis of Communication Between Elderly Individuals for Health Assessment 195
Yumi Wakita and Shunpei Matsumoto

A Study of Photographs as Communication Content for Intergenerational Conversation Support System 206
Xiaochun Zhou, Miyuki Iwamoto, Noriaki Kuwahara, and Kazunari Morimoto

Health Data Analytics and Visualization

Measuring Insight into Multi-dimensional Data from a Combination of a Scatterplot Matrix and a HyperSlice Visualization. 225
André Calero Valdez, Sascha Gebhardt, Torsten W. Kuhlen, and Martina Ziefle

Effective Visualization of Long Term Health Data to Support Behavior Change 237
Corinna A. Christmann, Gregor Zolynski, Alexandra Hoffmann, and Gabriele Bleser

That’s so Meta! Usability of a Hypergraph-Based Discussion Model 248
Felix Dietze, André Calero Valdez, Johannes Karoff, Christoph Greven, Ulrik Schroeder, and Martina Ziefle

FlowChart Tool for Decision Making in Interdisciplinary Research Cooperation 259
Ulrich Jansen and Wolfgang Schulz

Using EEG Data Analytics to Measure Meditation 270
Hong Lin and Yuezhe Li

Enhance the Use of Medical Wearables Through Meaningful Data Analytics 281
Kurt Reifferscheid and Xiaokun Zhang

User-Driven Semantic Classification for the Analysis of Abstract Health and Visualization Tasks 297
Sabine Theis, Peter Rasche, Christina Bröhl, Matthias Wille, and Alexander Mertens

EEG Features Extraction and Classification of Rifle Shooters in the Aiming Period 306
Liwei Zhang, Qianxiang Zhou, Zhongqi Liu, and Yu Wang

Design for Safety

Safety Does Not Happen by Accident, Can Gaming Help Improve Occupational Health and Safety in Organizations?. 321
Cameron Chodan, Pejman Mirza-Babaei, and Karthik Sankaranarayanan

Autonomous Robotic System for Pipeline Integrity Inspection 333
John Costa, Gavin DeAngelis, Daniel Lane, Chris Snyder, Abdelmagid Hammuda, Khalifa Al-Khalifa, Elsayed Elsayed, and Kang Li

Interactive Design of Digital Car Dashboard Interfaces	343
<i>Rui Li, Qing-Xing Qu, and Zhangping Lu</i>	
Emergency Usability Lab - Concept to Evaluate the Usability of Healthcare Systems in Emergencies.	354
<i>Peter Rasche, Alexander Mertens, and Christopher M. Schlick</i>	
Watch Out! User-Centered Feedback Design for a V2X-Smartphone App . . .	365
<i>Teresa Schmidt, Ralf Philipsen, Dzenan Dzafic, and Martina Ziefle</i>	
Safety Performance Evaluation Model for Airline Flying Fleets	384
<i>Yijie Sun, Min Luo, Yanqiu Chen, and Changhua Sun</i>	
Deciphering Workers' Safety Attitudes by Sensing Gait Patterns.	397
<i>Cenfei Sun, Changbum R. Ahn, Kanghyeok Yang, Terry Stentz, and Hyunsoo Kim</i>	
Driving Process' Analysis and HUD Design Based on Conditional Autonomous Traffic Safety.	406
<i>Jian-min Wang, Lu-lu Qian, and Yu-jia Wang</i>	
ECG Identification Based on PCA-RPROP.	419
<i>Jinrun Yu, Yujuan Si, Xin Liu, Dunwei Wen, Tengfei Luo, and Liuqi Lang</i>	
Author Index	433

Contents – Part I

Anthropometry, Ergonomics, Design and Comfort

Developing a Rapid Assessment Method to Estimate Berg Balance Scale Score of Elderly People	3
<i>Chih-Sheng Chang and Wei-Lun Chen</i>	
A Research on Effect of Pillow Height on Pressure and Comfort of Human Body's Prone Position	11
<i>Huimin Hu, Sun Liao, Chaoyi Zhao, Zhiyang Gui, and Fan Yang</i>	
Research on Pressure Comfort of Sofa Based on Body Pressure Distribution and Subjective Experience	26
<i>Huimin Hu, Yanlong Yao, Ling Luo, Linghua Ran, Chaoyi Zhao, Xin Zhang, and Rui Wang</i>	
Anthropometric Measurement of the Head of Chinese Children	39
<i>Linghua Ran, Xin Zhang, and Taijie Liu</i>	
Review on 3D Scanners for Head and Face Modeling	47
<i>Parth B. Shah and Yan Luximon</i>	
Comparison of Rarefication Techniques for Foot Simulation Using Subject Specific Three-Dimensional Anthropometry Data	57
<i>Liuxing Tsao, Liang Ma, and Tao Li</i>	
Construction of Deformable Trunk Atlas of Chinese Human Based on Multiple PET/CT Images: Preliminary Results	69
<i>Hongkai Wang, Xiaobang Sun, Li Huo, Xin Tang, and Changjian Liu</i>	
Introduction of the Anthropometry in the Early Design of a Nuclear Main Control Room	78
<i>Shengyuan Yan and Jean Luc Habiyaremye</i>	

Human Body and Motion Modelling

Muscle Fatigue Analysis Using OpenSim.	95
<i>Jing Chang, Damien Chablat, Fouad Bennis, and Liang Ma</i>	
Motion Analysis of the Tea Whisk Concerning the Way of Tea	107
<i>Akihiko Goto, Soutatsu Kanazawa, Tomoko Ota, Yuka Takai, and Hiroyuki Hamada</i>	

Visibility Analysis on Swing Motion of the Golf Player Based on Kinect . . . 115
Zhelin Li, Songbin Ye, Lijun Jiang, Yaqi Wang, Deli Zhu, and Xiaotong Fu

Analysis and Modeling of Fatigue During Weight-Bearing Walking 127
Zhongqi Liu, Ruiming Zhang, and Qianxiang Zhou

The Motion Analysis of Transferring from Bed to Wheelchair Conducted in the Nursing Field with Focusing on the Body Pressure Distribution. 141
Hiromi Nakagawa, Kazuyuki Mori, Koshiro Takahashi, Kazuaki Yamashiro, Yoichiro Ogura, and Akihiko Goto

Patella Shape Extraction from 3D Point Cloud Data for Personalized Knee Brace 160
Hyungan Oh and Jinwook Kim

Evaluation of Japanese Bowing of Non-experts by Experts. 169
Tomoya Takeda, Kazuaki Yamashiro, Xiaodan Lu, Shodai Kawakatsu, and Tomoko Ota

Appropriateness and Impression Evaluation of Japanese Seated Bow. 179
Tomoya Takeda, Noriyuki Kida, and Tadayuki Hara

A Study of Bed-Leaving Prediction by Using a Pressure-Sensitive Sensor . . . 188
Kengo Wada, Aya Mineharu, Noriaki Kuwahara, and Kazunari Morimoto

Classification of Artery and Vein in Retinal Fundus Images Based on the Context-Dependent Features 198
Yang Yan, Dunwei Wen, M. Ali Akber Dewan, and Wen-Bo Huang

A Universal 3D Gait Planning Based on Comprehensive Motion Constraints 214
Qiang Yi, Renran Tian, and Ken Chen

Development of an Enhanced Musculoskeletal Model for Simulating Lumbar Spine Loading During Manual Lifting Tasks 229
Xin Yue Zhu, Hyun Kyung Kim, and Yanxin Zhang

Smart Human-Centered Service System Design

Usability Evaluation Plan for Online Annotation and Student Clustering System – A Tunisian University Case 241
Miao-Han Chang, Rita Kuo, Fathi Essalmi, Maiga Chang, Vive Kumar, and Hsu-Yang Kung

Research on Multi Human-Computer Interface Design of Household Electrical Appliances	255
<i>Jiali Dong, Rui Li, Zhangyu Ji, and Canqun He</i>	
Research on Image Design of Historical and Cultural Blocks from the Perspective of User Experience	271
<i>Rong Han, Yang Hu, and Rui Li</i>	
Comparative Analysis of Wheelchair Transfer Movements Between Nurse and Care Worker	281
<i>Yasuko Kitajima, Yuka Takai, Kazuaki Yamashiro, Yoichiro Ogura, and Akihiko Goto</i>	
Capacity Allocation in a Service System: Parametric and Data-Driven Approaches	295
<i>Liping Liang, Guanlian Xiao, and Hengqing Ye</i>	
User Groups and Different Levels of Control in Recommender Systems	308
<i>Christine Mendez, Vlatko Lukarov, Christoph Greven, André Calero Valdez, Felix Dietze, Ulrik Schroeder, and Martina Ziefle</i>	
A Study on the Odor in “Omotenashi”, Japanese Hospitality	324
<i>Harumi Nakagawa and Noriaki Kuwahara</i>	
Delivering Personalized Information to Individuals in Super Smart Society. . .	336
<i>Kentaro Noda, Yoshihiro Wada, Sachio Saiki, Masahide Nakamura, and Kiyoshi Yasuda</i>	
Study of the Effects of Japanese Tea Ceremony Will Give the Peace of Mind of Guests.	348
<i>Tomoko Ota, Tomoya Takeda, Xiaodan Lu, Noriyuki Kida, Tadayuki Hara, and Akihiko Goto</i>	
An Overview of Open Source Software Systems for Smart Development of Virtual Environments.	358
<i>Daniele Regazzoni, Caterina Rizzi, and Andrea Vitali</i>	
Bowing Style in Japanese Famous TV Program	369
<i>Asuka Takenaka, Xiaodan Lu, Yasuyo Takenaka, Yuki Miyamoto, and Tomoko Ota</i>	
Combinatorial Auction Based Mechanism Design for Course Offering Determination	376
<i>Anton Vassiliev, Fuhua Lin, and M. Ali Akber Dewan</i>	
Design and Evaluation of a Human-Like Puppet as an Input Device for Ergonomic Simulation	393
<i>David Wiegmann, Holger Brüggemann, and Andreas Rausch</i>	

Object-Oriented User Interface Customization: Reduce Complexity and Improve Usability and Adaptation 404
Le Zhang, Qing-Xing Qu, Wen-Yu Chao, and Vincent G. Duffy

Human-Robot Interaction

A Study of Utilizing Communication Robots for Teaching Preschoolers a Good Manner. 421
Hiroyoshi Fukuta, Noriaki Kuwahara, and Kazunari Morimoto

Quantification of Elegant Motions for Receptionist Android Robot 435
Makoto Ikawa, Etsuko Ueda, Akishige Yuguchi, Gustavo Alfonso Garcia Ricardez, Ming Ding, Jun Takamatsu, and Tsukasa Ogasawara

Design of a Robotic Workmate. 447
Sarah Luisa Müller, Stefan Schröder, Sabina Jeschke, and Anja Richert

The Effects of the Robot Patient’s Patient-Likeness on Nursing Students 457
Mitsuhiro Nakamura, Yasuko Kitajima, Jun Ota, Taiki Ogata, Zhifeng Huang, Chingszu Lin, Noriaki Kuwahara, Jukai Maeda, and Masako Kanai-Pak

A Tactile Expression Mechanism Using Pneumatic Actuator Array for Notification from Wearable Robots 466
Hirotake Yamazoe and Tomoko Yonezawa

Haptic Interaction Design for Physical Contact Between a Wearable Robot and the User. 476
Tomoko Yonezawa and Hirotake Yamazoe

Author Index 491



<http://www.springer.com/978-3-319-58465-2>

Digital Human Modeling. Applications in Health, Safety, Ergonomics, and Risk Management: Health and Safety 8th International Conference, DHM 2017, Held as Part of HCI International 2017, Vancouver, BC, Canada, July 9-14, 2017, Proceedings, Part II
Duffy, V.G. (Ed.)
2017, XXII, 435 p. 200 illus., Softcover
ISBN: 978-3-319-58465-2