Contents – Part I

Design and Evaluation Methods, Techniques and Tools

Coding Schemes for Observational Studies of Usability in Collaborative Tangible User Interfaces ................................................................. 3
*Tarfah Alrashed, Almaha Almalki, Salma Aldawood, Anas Alfaris, and Areej Al-Wabil*

Design of Web-Based Tools to Study Blind People’s Touch-Based Interaction with Smartphones ................................................................. 7
*Maria Claudia Buzzi, Marina Buzzi, Barbara Leporini, and Amaury Trujillo*

Toward a New Design Philosophy: Politics and the Aesthetic of “We” Human-and-Technology in Interaction Design ................................. 13
*Hyunkyoung Cho*

Method to Design Adaptable and Adaptive User Interfaces .................... 19
*Francesca Gullà, Lorenzo Cavalieri, Silvia Ceccacci, Michele Germani, and Roberta Bevilacqua*

Designing for Affectibility: Principles and Guidelines ............................ 25
*Elaine C.S. Hayashi and M. Cecília C. Baranauskas*

A Comparative Analysis of Usability Evaluation Methods on Their Versatility in the Face of Diversified User Input Methods ...................... 32
*Daiju Ishikawa, Takashi Kato, and Chigusa Kita*

Understanding IoT Through the Human Activity: Analogical Interpretation of IoT by Activity Theory ............................................................. 38
*Narae Kim, Sangwon Lee, and Taehyun Ha*

A Pedagogical Approach to Usability in Serious Games .......................... 43
*Christine Kreutzer, Madeline Marks, and Clint Bowers*

Design Support Tool Using Pen Device for Simplification of Animation Design ....................................................................................... 49
*Taiki Maruya, Shin’ichi Tano, Tomonori Hashiyama, Mitsuru Iwata, Junko Ichino, and Yoichi Hyono*

User Experience and Other People: On User Experience Evaluation Framework for Human-Centered Design ............................................. 55
*Hiroyuki Miki*
Universal Usability in Mass Media via Discourse Analysis: A Case Study... 60
Stefanie Niklander, Ricardo Soto, and Broderick Crawford

International and Regional Standards for Usability and User Experience... 64
Linghua Ran, Yanfang Liu, Wen Li, and Xin Zhang

A Framework Proposal of UX Evaluation of the Contents Consistency on Multi Screens... 69
Wangmi Seok

Assessing Usability of a Post-Mission Reporting Technology:
A Novel Usability Questionnaire in Practice... 74
Mitchell J. Tindall and Beth F. Wheeler Atkinson

Validated Usability Heuristics: Defining Categories and Design Guidance... 79
Beth F. Wheeler Atkinson, Mitchell J. Tindall, and Gregory S. Igel

Cognitive and Psychological Issues in HCI

Eye Tracking Analysis of Readers’ Psychological Interaction
with Marketing Copy Referencing Life Values... 87
Miao-Hsien Chuang, Chin-Lung Chen, and Jui-Ping Ma

Questionnaire Survey on Attention of Young Adults... 93
Junmin Du, Weiyu Sun, and Xiaofan Wang

Spatial Effect of Target Display on Visual Search... 98
Xiaoli Fan, Zhongqi Liu, Qianxiang Zhou, and Fang Xie

Influence of Color Combination Pattern Considered Usability
to Mental Workload... 104
Shin’ichi Fukuzumi, Keiko Kasamatsu, Yusuke Ohta, Hideo Jingu,
Nobuyuki Watanabe, and Yukiko Tanikawa

Emotion Elicitation Using Film Clips: Effect of Age Groups on Movie
Choice and Emotion Rating... 110
Dilana Hazer, Xueyao Ma, Stefanie Rukavina, Sascha Gruss,
Steffen Walter, and Harald C. Traue

Examining the Gender Gap in Information Assurance:
A Study of Psychological Factors... 117
Hsiao-Ying Huang and Masooda Bashir

Development of a Research Framework to Elicit the Optimal Level
of Users’ Functional Intervention... 123
Song Jung and Sangwon Lee
The Effects of Life-Likeness on Persuasion and Attention-Drawing in a Mobile Digital Signage .................................................. 128
Yu Kobayashi, Mao Shinoda, Dai Hasegawa, and Hiroshi Sakuta

The Influence of Different Lighting Source Positions on the Visual Comfort of Refrigerator Illumination ........................................ 133
Linghua Ran, Xin Zhang, Hua Qin, Huimin Hu, Taijie Liu, and Chaoyi Zhao

The Effect of a High-Resolution 4K Tablet on Physiological and Psychological State While Viewing Various Types of Content .......... 138
Kiyomi Sakamoto, Seiji Sakashita, Kuniko Yamashita, and Akira Okada

Brain Mechanism Research on Visual Information Cognition of Digital Human Computer Interface ............................................. 144
Chengqi Xue, Xiaoli Wu, Yafeng Niu, Lei Zhou, Jiang Shao, and Zhangfan Shen

Yunhong Zhang, Na Liu, Xin Wu, Jing Chang, and Ruifeng Yu

Virtual, Augmented and Mixed Reality

AR and Maintenance - Visualization of Process Data and Engineering Information ................................................................. 159
Sven Buyer and Carsten Wittenberg

Building Virtual Roads from Computer Made Projects ........................................ 163
Carlos Campos, João Miguel Leitão, and António Fernando Coelho

Camouflage Assessment of Color Pattern Strategies in Different Environmental Contexts .................................................. 170
Woon Jung Cho, Minsun Kim, Eunji Lee, Suyoung Kim, Junghwan Han, and Kwang-Hee Han

Augmented Reality Central Venous Access Training Simulator ............... 174
Erika Gutierrez-Puerto, Lizeth Vega-Medina, Gerardo Tibamoso, Alvaro Uribe-Quevedo, and Byron Perez-Gutierrez

Use of Immersive Virtual Environments to Understand Human-Building Interactions and Improve Building Design .......................... 180
Arsalan Heydarian, Evangelos Pantazis, David Gerber, and Burcin Becerik-Gerber

A Virtual Cloth Manipulation System for Clothing Design .................. 185
Shgeru Inui, Yuko Mesuda, and Yosuke Horiba
Haptic Device Using a Soldering Test System .............................. 190

Manabu Ishihara

Learning to Juggle in an Interactive Virtual Reality Environment ................. 196

Tobias Kahlert, Florian van de Camp, and Rainer Stiefelhagen

Integration of Artificial Intelligence Techniques in a Virtual Environment .... 202

Sandra Mateus and John Branch

Properties of a Peripheral Head-Mounted Display (PHMD) .................. 208

Denys J.C. Matthies, Marian Haescher, Rebekka Alm, and Bodo Urban

Design and Implementation of High-Resolution Sea-Lane Image Texture
for Marine Virtual Environment .................................................. 214

Hiroyo Ohishi, Tetsuya Haneta, Tadasuke Furuya,
and Takahiro Takemoto

Interactive Virtual Planning Tools for Sustainable Forest Production
in Mountain Areas ................................................................. 220

Giulio Panizzoni, Daniele Magliocchetti, Federico Prandi,
and Raffaele De Amicis

Initial Evaluation of a Modern Augmented Reality Display
for Deployable Embedded Training System .................................. 226

Lee Sciarini, Jason Elfe, Tim Shilling, and Eric Martin

A Virtual Reality Keyboard with Realistic Key Click Haptic Feedback .... 232

Chien-Min Wu, Chih-Wen Hsu, and Shana Smith

Control Yourself: A Mixed-Reality Natural User Interface .................... 238

Elena Zhizhimontova and John Magee

Cross-Cultural Design

Methodology for the Development of Interface Design Guidelines
Based on Local Cultural Dimensions ........................................... 245

Zurida Ishak, Azizah Jaafar, and Norshita Mat Nayan

“Re:Radio”, The Place Oriented Internet Radio to Enhance
the Cross-Cultural Understanding in Japan ................................. 249

Ayaka Ito and Katsuhiko Ogawa

Poke, Swipe, and Pinch: Reinventing Adaptability Across Cultures
Using Mixed Technology ......................................................... 256

Linda Lim

The Research of Chinese Pilots Operating Safety ............................. 262

Mei Rong, Min Luo, Yanqiu Chen, and Changhua Sun
The Effects of Regional Culture on User Interface Experience: A Case Study of Xin’an Hangu Guan in China. Le Xi, Jianxin Cheng, Junnan Ye, and Wangqun Xiao

The Study of the Cultural Values of Lighting Products Based on Intention Recognition and 3D Printing Technology. Chaoxiang Yang, Zhang Zhang, Xu Yang, and Xiaohan Le

Design for Aging

Strengthening Connections: Intuitive Interfaces for Life Story Work in Elder Care. Mahdi Chaker, Michael Cimerola, and Marietta Scanlon

The Effect of Age on Perception and Preference of App Icon Styles. Chiuwu Huang and Po-Ti Chen

An iPad Application Prototype to Enhance Memory of Older Adults. Wonsil Jang

Applying Usability Test to Find the Interface Design Principle of HRV Device for Senior Users. Hsin-Chang Lo, I-Jen Sung, and Yu-Ting Lin

Experiences of Older Patients with Multiple Chronic Conditions in the Intensive Ambulatory Care Home Telehealth Program. Rony Oosterom-Caló, Kyle Vice, and Michael Breslow

The Speech Recognition Ability for Different Age Groups on the Chinese Language System. Linghua Ran, Ling Luo, Xin Zhang, Taijie Liu, and Chaoyi Zhao

Family Channel: Accessible Social Media for Older Adults. Christopher Romanyk, Pejman Salehi, Joseph Sant, Lia Tsotsos, and Ricardo Chavez

Social Engagement in Elderly Care Homes: Towards Designing an Application to Reduce Social Loneliness. Jip ter Voort, Joey Radstaat, Marisse Douma, Laura Clarijs, Roxanne Arnts, and Suleman Shahid

The Gods Play Dice Together: The Influence of Social Elements of Gamification on Seniors’ User Experience. Ingmar Wagner and Michael Minge
Designing a Map-Based Application and a Conversational Agent for Addressing Memory Problems .................................................. 340
Akihito Yoshii, Helena Malmivirta, Mika Luimula, Paula Pitkäkangas, and Tatsuo Nakajima

Children in HCI

Examining the User Experience (UX) of Children’s Interaction with Arabic Interfaces in Educational Learning Contexts ............................. 349
Wea’am A. Alrashed and Asma A. Alhussayen

A Study of User Behavior in the Parent-Child Reading Area: A Case Study in Taipei Public Library ......................................................... 355
Jo-Han Chang and Pao-Ching Tsai

The Influence of Parenting Time on Children’s Growth and Development . . 361
Jo-Han Chang and Tien-Ling Yeh

A Novel 3D Wheelchair Simulation System for Training Young Children with Severe Motor Impairments .............................................. 366
Jicheng Fu, Cole Garien, Sean Smith, Wenxi Zeng, and Maria Jones

Development and Evaluation of Emotional Robots for Children with Autism Spectrum Disorders ....................................................... 372
Myounghoon Jeon, Ruimin Zhang, William Lehman, Seyedeh Fakhrohosseini, Jaclyn Barnes, and Chung Hyuk Park

Serious Game for the Evaluation of Cognitive Function of Kids .............. 377
Donghan Kim and C.J. Lim

Smart Playground: A Tangible Interactive Platform with Regular Toys for Young Kids ................................................................. 383
Duc-Minh Pham, Thinh Nguyen-Vo, and Minh-Triet Tran

Designing Interactive Soft Toys for Children with Autism to Improve Communications Through Sensory Relaxation ......................... 389
Jinsil Hwaryoung Seo and Pavithra Aravindan

iCare: An Interface Design Model for Remote Communicating and Monitoring of Children Care ...................................................... 394
Tao Xu and Yun Zhou

Product Design

Adaptive Depth Cue Adjustments of Interactive and Stereoscopic 3D Product Models for Design Education ............................................. 403
Li-Chieh Chen, Po-Ying Chu, and Yun-Maw Cheng
Human-Centered Product Owner: How Human-Centered Design Can Sharpen Scrum Methodology ......................................................... Camila Kamarad Zocal Garcia

Intuitive Placement of Objects in Web-Based CAD Environments ............ Andres Felipe Kordek and Arjan Kuijper

Fashion Projection Mapping Using Basic Modeling Form ....................... EunJu Lee, Yang Kyu Lim, Hyun Chun Jung, and Jin Wan Park

Creating Consistency Between Products Using Research-Driven UI Guidelines ................................................................. Muzayun Mukhtar, Radhika Wakankar, and Christopher Bertrand

The Teaching Method of Graphic Design in Brazil, Methodology of Brand Development and Their Market Outcomes ....................... João Carlos Riccó Plácido da Silva, Luis Carlos Paschoarelli, and José Carlos Plácido da Silva

Analysis on Universality Evaluation Standard System of Product Design on Basis of Kansei Engineering and Virtual Reality ......................... Wangqun Xiao, Jianxin Cheng, Xuejie Wang, Junnan Ye, and Le Xi

The New Product Development Research of Chinese Ming and Qing Dynasty’s Furniture Based on 3-D Printing ................................. Xuejie Wang, Wangqun Xiao, and Yimin Song

Using Eye Tracking Technology to Evaluate New Chinese Furniture Material Design ........................................................................ Junnan Ye, Jianxin Cheng, Le Xi, and Wangqun Xiao

Research on Influence Factors of Design Education Orientation-Taking Italian Design Education as an Example ........................................... Zhang Zhang, Jianxin Cheng, and Chaoxiang Yang

Gesture, Gaze and Motion Detection, Modelling and Recognition

Input Interface Using Eye-Gaze and Blink Information ................................ Kiyohiko Abe, Hironobu Sato, Shogo Matsuno, Shoichi Ohi, and Minoru Ohyama

Improvement of Robustness of Nostrils Detection by Specifying the Existable 3D Domain of Nostrils Based on Stereo Measurements of Nostrils and Pupils ........................................... Yoshinobu Ebisawa, Kiyotaka Fukumoto, and Hiroaki Tanaka
Detection of Pupil and Corneal Reflection Using High-speed Camera for Gaze Detection Under Face Intense Illumination and a Solution of Glass Reflection Problem by Improving Light Source. 475
  Kiyotaka Fukumoto, Yoshinobu Ebisawa, and Kohei Mochizuki

Study of Tile Menu Selection Technique Using the Relative Position of Joints for Gesture Operation 481
  Yamato Gomi and Katsuhiko Onishi

A Real-Time Sensing of Gait and Viewing Direction for Human Interaction in Virtual Training Applications 485
  Gyutae Ha, Sangho Lee, Jaekwang Cha, Hojun Lee, Taewoo Kim, and Shiho Kim

Developing STEAM Using KINECT: A Case Study on Motion-Capture Functions 491
  Hyung-Sook Kim and Seong-Hee Chung

Depth Camera Calibration and Knife Tip Position Estimation for Liver Surgery Support System 496
  Masanao Koeda, Akio Tsukushi, Hiroshi Noborio, Katsuhiko Onishi, Kiminori Mizushino, Takahiro Kunii, Kaoru Watanabe, Masaki Kaibori, Kosuke Matsui, and Masanori Kwon

CyberTouch - Touch and Cursor Interface for VR HMD 503
  Sangho Lee, Gyutae Ha, Jaekwang Cha, Jinhyeok Kim, Hojun Lee, and Shiho Kim

Human Avatar Robotic Puppeteering (HARP) 508
  Christopher Martinez and Cameron MacDonald

An “Origami” Support System by Using Finger Gesture Recognition 513
  Koji Nishio, Kazuto Yamamoto, and Ken-ichi Kobori

A New Approach of Automatic Detection and Analysis of Body Language 519
  Inass Salloum, Youssef Bou Issa, and Taline Boyajian

Using Eye Tracking as Human Computer Interaction Interface 523
  Holger Schmidt and Gottfried Zimmermann

A Shoe Mounted System for Parkinsonian Gait Detection and Real-Time Feedback 528
  Arash Tadayon, Jonathan Zia, Lekha Anantuni, Troy McDaniel, Narayanan Krishnamurthi, and Sethuraman Panchanathan

Handwritten Character Recognition in the Air by Using Leap Motion Controller 534
  Kazuki Tsuchida, Hidetoshi Miyao, and Minoru Maruyama
Comfort Analysis in EVA Reachable Envelope Based on Human-Spacesuit Integrated Biomechanical Modeling ................................................................. 539
  Xiaodong Wang, Chunhui Wang, Zheng Wang, and Hao Li

Interaction Design for Navigating Virtual Spaces—An Example by Using Kinect ................................................................. 546
  Yen-Liang Wu

Natural User Interface for Board Games Using Lenticular Display and Leap Motion ................................................................. 552
  Kazuhisa Yanaka and Daichi Ishiguro

A Mouse-Like Hands-Free Gesture Technique for Two-Dimensional Pointing ................................................................. 558
  Yusaku Yokouchi and Hiroshi Hosobe

Reasoning, Optimisation and Machine Learning for HCI

Recent Harmony Search Algorithms for 0–1 Optimization Problems ............................ 567
  Broderick Crawford, Ricardo Soto, Néstor Guzmán, Franklin Johnson, and Fernando Paredes

Experiential Solving: Towards a Unified Autonomous Search Constraint Solving Approach ................................................................. 573
  Broderick Crawford, Ricardo Soto, Kathleen Crawford, Franklin Johnson, Claudio León de la Barra, and Sergio Galdames

Towards a Framework for Adaptive Constraint Propagation ................................................................. 578
  Broderick Crawford, Ricardo Soto, Franklin Johnson, Eric Monfroy, Enrique Norero, and Eduardo Olguín

An Artificial Bee Colony Algorithm for the Resource Constrained Project Scheduling Problem ................................................................. 582
  Broderick Crawford, Ricardo Soto, Franklin Johnson, Enrique Norero, and Eduardo Olguín

A Semi-Automatic Word-Level Annotation and Transcription Tool for Spelling Error Categories ................................................................. 587
  L. Linhuber, S. Stüker, R. Lavalley, and K. Berkling

The Complexity of Designing and Implementing Metaheuristics ................................................................. 593
  Ricardo Soto, Broderick Crawford, Rodrigo Olivares, Cristian Galleguillos, Kathleen Crawford, Franklin Johnson, and Fernando Paredes

A Filtering Technique for Helping to Solve Sudoku Problems ................................................................. 598
  Ricardo Soto, Broderick Crawford, Cristian Galleguillos, Kathleen Crawford, and Fernando Paredes
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Learning Multiple Probabilistic Linear Discriminant Analysis</td>
<td>604</td>
</tr>
<tr>
<td><em>Yi Yang and Jiasong Sun</em></td>
<td></td>
</tr>
<tr>
<td><strong>Information Processing and Extraction for HCI</strong></td>
<td></td>
</tr>
<tr>
<td>Predicting and Visualizing Wine Characteristics Through Analysis</td>
<td>613</td>
</tr>
<tr>
<td>of Tasting Notes from Viewpoints.</td>
<td></td>
</tr>
<tr>
<td><em>Brendan Flanagan, Nao Wariishi, Takahiko Suzuki, and Sachio Hirokawa</em></td>
<td></td>
</tr>
<tr>
<td>Extraction of Key Segments from Day-Long Sound Data</td>
<td>620</td>
</tr>
<tr>
<td><em>Akinori Kasai, Sunao Hara, and Masanobu Abe</em></td>
<td></td>
</tr>
<tr>
<td>A Model of Decision Support Based on Estimation of Group Status</td>
<td>627</td>
</tr>
<tr>
<td>by Using Conversation Analysis.</td>
<td></td>
</tr>
<tr>
<td><em>Susumu Kono and Kenro Aihara</em></td>
<td></td>
</tr>
<tr>
<td>Computer System for Musicians and Composers to Analyze Music</td>
<td>633</td>
</tr>
<tr>
<td>Composition Process.</td>
<td></td>
</tr>
<tr>
<td><em>Tetsuya Maeshiro and Midori Maeshiro</em></td>
<td></td>
</tr>
<tr>
<td>Using Structural Topic Modeling to Detect Events and Cluster Twitter</td>
<td>639</td>
</tr>
<tr>
<td>Users in the Ukrainian Crisis.</td>
<td></td>
</tr>
<tr>
<td><em>Alan Mishler, Erin Smith Crabb, Susannah Paletz, Brook Hefright, and Ewa Golonka</em></td>
<td></td>
</tr>
<tr>
<td>Improvement of Chance Index in Consideration of Cluster Information</td>
<td>645</td>
</tr>
<tr>
<td><em>Ryosuke Saga and Yukihiro Takayama</em></td>
<td></td>
</tr>
<tr>
<td>Knowledge Extraction from Web Reviews Using Feature Selection</td>
<td>650</td>
</tr>
<tr>
<td>Based on Onomatopoeia.</td>
<td></td>
</tr>
<tr>
<td><em>Fumiaki Saitoh, Hikaru Aoki, and Shohei Ishizu</em></td>
<td></td>
</tr>
<tr>
<td>Reading Between the Lines: A Prototype Model for Detecting Twitter</td>
<td>656</td>
</tr>
<tr>
<td>Sockpuppet Accounts Using Language-Agnostic Processes.</td>
<td></td>
</tr>
<tr>
<td><em>Erin Smith Crabb, Alan Mishler, Susannah Paletz, Brook Hefright, and Ewa Golonka</em></td>
<td></td>
</tr>
<tr>
<td>Processing Specialized Terminology in Multilingual Applications:</td>
<td>662</td>
</tr>
<tr>
<td>An Interactive Approach.</td>
<td></td>
</tr>
<tr>
<td><em>Christina Valavani, Christina Alexandris, Stefanos Tassis, and Antonios Iliakis</em></td>
<td></td>
</tr>
<tr>
<td><strong>Image and Video Processing for HCI</strong></td>
<td></td>
</tr>
<tr>
<td>Texture Image Segmentation Using Spectral Clustering</td>
<td>671</td>
</tr>
<tr>
<td><em>Hui Du, Yuping Wang, Xiaopan Dong, and Yiu-ming Cheung</em></td>
<td></td>
</tr>
</tbody>
</table>
An Adaptive Particle Filtering for Solving Occlusion Problems of Video Tracking. Lan-Rong Dung, Yu-Chi Huang, Ren-Yu Huang, and Yin-Yi Wu

Construction of 3-Dimensional Virtual Environment Based on Photographed Image (the Acquisition and Processing of the Photographed Image) Tetsuya Haneta, Hiroyo Ohishi, Tadasuke Furuya, and Takahiro Takemoto

A Method of Automatic Cage Generation for Shape Deformation by Using Elastic Models Takayuki Kanaya, Yuta Muraki, Koji Nishio, and Kenichi Kobori

Employing Mobile Applications in Human-Machine Interaction in Visual Pattern Recognition Research Amir Schur and Charles C. Tappert


Brain and Physiological Parameters Monitoring

The Estimation of Taste Preference Based on Prefrontal Cortex Activity Hirotoshi Asano

Is the Mood Really in the Eye of the Beholder? Mojgan Hashemian, Hadi Moradi, Maryam S. Mirian, Mehdi Tehrani-Doost, and Rabab K. Ward

Towards EMG Based Gesture Recognition for Indian Sign Language Interpretation Using Artificial Neural Networks Abhiroop Kaginalkar and Anita Agrawal

A Crystal Ball for Meditators? Can Meditation Be Measured by Wireless Devices, and in Particular by the Neurosky Mindwave Mobile? Andrew Levine

Development of a Glasses-Like Wearable Device to Measure Nasal Skin Temperature Tota Mizuno and Yuichiro Kume

Decoding of Upper Limb Movement Using EEG and Sparse Coding Masashi Yamashita
Dialogue Systems

Towards Classification of Engagement in Human Interaction with Talking Robots .................................................. 741
   Yuyun Huang, Christy Elias, João P. Cabral, Atul Nautiyal, Christian Saam, and Nick Campbell

On Appropriateness and Estimation of the Emotion of Synthesized Response Speech in a Spoken Dialogue System ............... 747
   Taketo Kase, Takashi Nose, and Akinori Ito

Dialogue Efficiency Evaluation of Turn-Taking Phenomena in a Multi-layer Incremental Simulated Environment ......................... 753
   Hatim Khouzaimi, Romain Laroche, and Fabrice Lefèvre

Comparing the Trade-off of Believability and Performance of Abstract Intelligent Agents and Humans Playing Super Mario Bros .................. 759
   Edward Morgan and Konstantinos Papangelis

Neut: “Hey, Let Her Speak”: Design of a Speech Eliciting Robot that Intervenes in Brainstorming Sessions to Ensure Collaborative Group Work ................................................................. 764
   Naoki Ohshima, Tatsuya Watanabe, Natsuki Saito, Riyo Fujimori, Hiroko Tokunaga, and Naoki Mukawa

Author Index .................................................................................................................................................. 771
## Contents – Part II

### Mobile Interaction and Smart Devices

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is Touch-Based Text Input Practical for a Smartwatch?</td>
<td>3</td>
</tr>
<tr>
<td><em>Barbara S. Chaparro, Jibo He, Colton Turner, and Kirsten Turner</em></td>
<td></td>
</tr>
<tr>
<td>User Recognition and Preference of App Icon Stylization Design on the Smartphone</td>
<td>9</td>
</tr>
<tr>
<td><em>Chun-Ching Chen</em></td>
<td></td>
</tr>
<tr>
<td>Towards Personalized Interfaces for Mobile Applications</td>
<td>16</td>
</tr>
<tr>
<td>Using a Natural Text-Based Interaction</td>
<td></td>
</tr>
<tr>
<td><em>Yi Ji, Chek Tien Tan, and Ernest Edmonds</em></td>
<td></td>
</tr>
<tr>
<td>Can Color Tell? Smartphone LED Notification Color and Users’ Perception of the Situation</td>
<td>22</td>
</tr>
<tr>
<td><em>Minsun Kim, Yongjae Kim, Jaeyoung Ji, Jiyoung Hong, Jinhae Coi, and Kwang-Hee Han</em></td>
<td></td>
</tr>
<tr>
<td>A Suggestion for a Smartphone Video Player Interface</td>
<td>27</td>
</tr>
<tr>
<td><em>Gyu Hong Kyung</em></td>
<td></td>
</tr>
<tr>
<td>Implications of HCI in Energy Consumption Between Native and Rich-Client Applications for Navigations Widgets in Tablets</td>
<td>32</td>
</tr>
<tr>
<td><em>Ana Belem Márquez Quintos, Amilcar Meneses Viveros, and Erika Hernández Rubio</em></td>
<td></td>
</tr>
<tr>
<td>Adaptive UI from Human Behavior Pattern on Small Screen Interface: Focused on Double-Swipe Interface</td>
<td>39</td>
</tr>
<tr>
<td><em>Hee-Seung Moon and Da Young Ju</em></td>
<td></td>
</tr>
<tr>
<td>Hyper Panel System: Display System for Poster Layouts with Detailed Contents</td>
<td>45</td>
</tr>
<tr>
<td><em>Hiroshi Suzuki, Akira Hattori, Hisashi Sato, and Haruo Hayami</em></td>
<td></td>
</tr>
<tr>
<td>Operation Sound Influence on Tablet Device Character Input Operation</td>
<td>51</td>
</tr>
<tr>
<td><em>Won-Seok Yang, Haruumi Kondo, and Wang-Mi Seok</em></td>
<td></td>
</tr>
</tbody>
</table>

### Social Media

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtually Augmented Social Skills Training</td>
<td>59</td>
</tr>
<tr>
<td><em>Kevin Ambrose</em></td>
<td></td>
</tr>
</tbody>
</table>
Acceptance and Quality Perception of Social Network Standard
and Non-standard Services in Different Cultures .......................... 65
   Katsiaryna S. Baran and Wolfgang G. Stock

Between the Profiles: Another Such Bias. Technology Acceptance Studies
on Social Network Services ..................................................... 71
   Katsiaryna S. Baran and Wolfgang G. Stock

The Proteus Effect: Influence of Avatar Appearance on Social Interaction
in Virtual Environments ......................................................... 78
   Yulong Bian, Chao Zhou, Yu Tian, Peng Wang, and Fengqiang Gao

Mettle: Reframing Messaging as a Felt Anticipation ........................ 84
   Amy Yo Sue Chen and Rung-Huei Liang

Social Media Use and Impact on Interpersonal Communication ........ 91
   Yerika Jimenez and Patricia Morreale

Emotional Selling on Social Media: The ‘Punctum’ of Personality
and Photographs ........................................................................ 97
   S.M.S. Mustafah, H. Khalid, and A.S. Ismail

Towards the Easy Analysis of Mass Media Audience Reaction
on Social Networks via Discursive Category Tools .......................... 103
   Stefanie Niklander, Ricardo Soto, and Broderick Crawford

A Proposal of an SNS to Support Individual Practices
in a Voluntary Community ....................................................... 107
   Kohei Otake, Masashi Komuro, Yoshihisa Shinozawa,
   Tomofumi Uetake, and Akito Sakurai

Providing Tools to Enable Information Audit in Social Networks ....... 113
   Alexandre Pinheiro, Claudia Cappelli, and Cristiano Maciel

A Longitudinal Field Study on Kiss Mediation Interface for Long
Distance Relationships ............................................................ 118
   Elham Saadatian, Hooman Samani, and Ryohei Nakatsu

Trust Towards Social Media in Emergencies: A Perspective of Professional
Emergency Personnel in Europe ............................................... 123
   Hermann Szymczak, Pinar Kuecuekbalaban, Daniela Knuth,
   and Silke Schmidt

HCI in Business and Innovation

Creativity in Agile Software Development Methods ........................ 131
   Broderick Crawford, Kathleen Crawford, Ricardo Soto,
   and Claudio León de la Barra
Use of Quality Management Principles in the Shaping of Work Environment ........................................ 136
   Adam Górny

NEC’s Approach to Social Value Design ............................... 143
   Izumi Kohno, Masahiro Nishikawa, Takaya Fukumoto, and Takashi Matsuda

Assessment of Business Analytics Trust Through Examination of Personal IT Use .............................. 149
   Benjamin Larson and Casey Cegielski

Leadership in Agile Software Development Methods ................................................................. 154
   Claudio León de la Barra, Sergio Galdames, Broderick Crawford, Ricardo Soto, and Kathleen Crawford

Interactive Tool to Find Focal Spots in Human Computer Interfaces in eCommerce: eCommerce Consumer Analytics Tool (eCCAT) ........................................ 159
   VenkataSwamy Martha, Zhenrui Wang, Angela Jiang, and Sam Varghese

Usability Evaluation of an M-Commerce System Using Proxy Users ............................................. 164
   Gabriela Novak and Lars Lundberg

Current State of HCI Practice in the Estonian Software Development Industry .................................. 170
   Abiodun Ogunyemi, David Lamas, Hegle Sarapuu, and Isaias Barreto da Rosa

   Hyun-Sun Ryu and Jung Lee

Innovation Lessons: Implications of Nikola Tesla’s Life for Today’s Engineers, Scientists, and Technology Designers ..................................................... 183
   Maximus Schmorrow and Dylan Schmorrow

The Importance of Using Gestalt and Grid in Building Brands ..................................................... 187
   João Carlos Riccó Plácido da Silva, Luis Carlos Paschoarelli, and José Carlos Plácido da Silva

Change of Government R&D in HCI Categories in Korea .......................................................... 192
   Seung-Kyu Yi
Learning Technologies

Usability of Mobile Applications in Saudi Higher Education: An Exploratory Study ........................................... 201
Nada Al-Wabil

On-the-fly Notes: Instructor to Student Transfer of In-Class Produced Notes. ..................................................... 206
Nancy Alajarmeh

Facebook as a Learning Tool in Formal Learning Process ................. 212
Alaeddin M.H. Alawawdeh and Stewart James Kowalski

The Use of Facebook as an Assisting Tool in Teaching Computer Science Courses ............................................. 218
Anwar Alhenshiri and Hoda Badesh

The Current Use of Cell Phone in Education .................................................... 224
Elham Alsadoon and Hamadah Alsadoon

The Instructional Model Framework of Undergraduate Industrial Design Core Course .......................................... 230
Wenzhi Chen

Developing Simple Tools for Measuring and Evaluating Students’ Works with a Smartphone ..................................... 235
Ryota Fukutani, Akinobu Ando, Shota Itagaki, and Hiraku Abiko

A Content-Based Approach for Supporting Teachers in Discovering Dependency Relationships Between Instructional Units in Distance Learning Environments ...................................... 241
Fabio Gasparetti, Carla Limongelli, and Filippo Sciarrone

Understanding of the Students’ Behavioral Intention to Use Online Discussion Site (ODS) Using Rasch Analysis .............. 247
Azizah Jaafar and Prasanna Ramakrisnan

Pump It up! – Conception of a Serious Game Applying in Computer Science .................................................. 253
Daniela Janßen, Christian Tummel, Anja Richert, Daniel Schilberg, and Sabina Jeschke

Badminton’s Multimedia Courseware of Interactive Design Based on the MOOCs Mode ...................................... 259
Mao Jie
Development of STEAM Educational Games Focused on Aesthetic and Bodily Expression in K-12 Science Class. ................................. 265
Hyung Sook Kim, Hale Kim, and Yong Hyun Park

Out-of-Class Online Language Learning Partnership Between Russian and American Students: Analysis of Tandem Project Results ............... 271
Marina Kogan, Nina Popova, Konstantin Shestakov, and Lonny Harrison

Non-calibrated Peer Assessment: An Effective Assessment Method for Student Creative Works .................................................. 277
Jinshuang Li, Yu Zhang, and Kening Gao

Cooperative Writing Peer Feedback in Online Moodle System .............. 283
Hsin-Yi Lien

Using Digital Document Network System for Group Learning Activities .... 290
Kenji Matsunaga and Kyoko Yoshida

See the Flex: Investigating Various Display Settings for Different Study Conditions ................................................................. 295
Michael Saenz, Joshua Strunk, Kelly Maset, Erica Malone, and Jinsil Hwaryoung Seo

Development of Intuitive Force Presentation Method Using Stopper Mechanism for Skill Training .............................................. 301
Masamichi Sakaguchi and Mingoo Lee

Towards a Visual and Tangible Learning of Calculus .......................... 307
Patricia Salinas, Eliud Quintero, Xavier Sánchez, and Eduardo González Mendivil

Effect of Interactive E-Learning on Pupils’ Learning Motivation and Achievement in Mathematics ................................................. 313
Yuan-Zheng Wang and Chii-Zen Yu

HCI in Health

Learning-Training System for Medical Equipment Operation .................. 321
Ren Kanehira, Kazinori Kawaguchi, and Hideo Fujimoto

A New Assessment Model of Mental Health ..................................... 328
Jingqiang Li, Ning Zhao, and Bingxia Hao

“Fit” Determining Nurses’ Satisfaction of Nursing Information System Usage ............................................................... 334
Hsien-Cheng Lin and Chen-Chia Chen
Research on Health Management System Based on Clouding Computing
Qi Luo and Tianbiao Zhang
340

Designing A Mobile Application for Complementary and Alternative Medicine: A Usability Approach
Miloslava Plachkinova, Guillaume Faddoul, and Samir Chatterjee
345

Innovations in OSH Trainings - Social Skills of Safety Instructor Versus On-line Training
Joanna Sadłowska-Wrzesińska and Izabela Gabryelewicz
350

On the Sharing of Nursing Care Information with Employees in Japanese Companies
Yumiko Taguchi and Yoko Ogushi
356

Preliminary Guidelines to Build a Wearable Health Monitoring System for Patients: Focusing on a Wearable Device with a Wig
Junwoo Yoo, Nokchwan Kim, Jeongho Keum, Ji Hwan Ryu, Minjae Park, Jihoon Lee, Byung-Chull Bae, and Jundong Cho
361

Assistive Technologies and Environments

An Evaluation of AccessBraille: A Tablet-Based Braille Keyboard for Individuals with Visual Impairments
Hanan Alhussaini, Stephanie Ludi, and Jim Leone
369

An Assisted Living Home for Alzheimer’s Patient in Saudi Arabia, A Prototype
Sulaf Almagooshi, Mona Hakami, Maha Alsayyari, Wafa Alrajhi, and Sarah Alkoblan
375

Requirements Engineering of Ambient Assisted Living Technologies for People with Alzheimer’s
Afnan AlRomi, Ghadah AlOfisan, Norah AlRomi, Sulaf AlMagooshi, and Areej Al-Wabil
381

“See Medication”: An Arabic Assistive Mobile Application for Asthmatic Visually Impaired Patients
Afnan F. Alsadhan, Sarah M. Bin Mahfodh, Nada M. Alsuhebany, Hind A. Bin Ajlan, Hana A. Al-Alashaykh, Asma A. Alzahrani, and Rafeef M. Aqel
388

Development of Serious Game for the Upper Arms Rehabilitation: “Balance Ball Rhythm Game” Case Study
Sung-Taek Chung, Sung-Wook Shin, and C.J. Lim
392
Towards a Google Glass Based Head Control Communication System for People with Disabilities .................................................. 399
   James Gips, Muhan Zhang, and Deirdre Anderson

A Comparative Study: Use of a Brain-Computer Interface (BCI) Device by People with Cerebral Palsy in Interaction with Computers ................. 405
   Regina Heidrich, Francisco Rebelo, Marsal Branco, João Batista Mossmann, Anderson Schuh, Emely Jensen, and Tiago Oliveira

Indoor Wheelchair Navigation for the Visually Impaired ...................... 411
   Manar Hosny, Rawan Alsarrani, and Abir Najjar

Assessment of Electronic Write-in Voting Interfaces for Persons with Visual Impairments ................................................................. 418
   Ashley Ongsarte, Youxuan Jiang, and Kyla McMullen

Tool for Alternative and Augmented Communication: A Study Implemented in Hospitals Environment to Support Pedagogical Therapies . . . 424
   Ednilson G. Rossi, Janaina C. Abib, and Luciana A. Rodrigues

Access All Areas: Designing a Hands-on Robotics Course for Visually Impaired High School Students ......................................................... 430
   Valerie Stehling, Katharina Schuster, Anja Richert, and Sabina Jeschke

Visual Approach of a Mobile Application for Autistic Children: Little Routine ................................................................................. 436
   Wan Fatimah Wan Ahmad and Iman Nur Nabila Azahari

Development of a Game that Visually-Impaired People Can Actively Enjoy .... 443
   Sadahide Yoshida and Kyoko Yoshida

Fitness and Well-Being Applications

Investigating the Role of Haptic Stimulation in Mobile Meditation Tools . . . 451
   Antoinette Leanna Bumatay and Jinsil Hwaryoung Seo

A Usability Evaluation of Fitness-Tracking Apps for Initial Users ............... 457
   Ana Carolina Tomé Klock and Isabela Gasparini

Research on Intelligent Exercise Prescription System for Civil Servant . . . 463
   Qi Luo and Wei Deng

Prototype of a Shoulder and Elbow Occupational Health Care Exergame . . . 467
   Wilson Nava, Cesar Andres Ramos Mejia, and Alvaro Uribe-Quevedo
### Contents – Part II

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>An Investigation of the Usability and Desirability of Health and Fitness-Tracking Devices</td>
<td>473</td>
</tr>
<tr>
<td>Ashton Pfannenstiel and Barbara S. Chaparro</td>
<td></td>
</tr>
<tr>
<td>Development of an Open Electronics User Inerface for Lower Member Occupational Health Care Exergaming</td>
<td>478</td>
</tr>
<tr>
<td>Estefania Ramos-Montilla and Alvaro Uribe-Quevedo</td>
<td></td>
</tr>
<tr>
<td>Impact of Intermittent Stretching Exercise Animation on Prolonged-Sitting Computer Users’ Attention and Work Performance</td>
<td>484</td>
</tr>
<tr>
<td>Sy-Chyi Wang and Jin-Yuan Chern</td>
<td></td>
</tr>
<tr>
<td><strong>Location and Context Awareness</strong></td>
<td></td>
</tr>
<tr>
<td>Dynamic Adaptation of Personalised Recommendations Based on Tourists’ Affective State</td>
<td>491</td>
</tr>
<tr>
<td>Petr Aksenov, Andres Navarro, David Oyarzun, Theo Arentze, and Astrid Kemperman</td>
<td></td>
</tr>
<tr>
<td>Dynamic Operations Wayfinding System (DOWS) for Nuclear Power Plants</td>
<td>497</td>
</tr>
<tr>
<td>Ronald L. Boring, Thomas A. Ulrich, and Roger T. Lew</td>
<td></td>
</tr>
<tr>
<td>Context-Aware Systems for Complex Data Analysis</td>
<td>503</td>
</tr>
<tr>
<td>Adam Fouse, Stacy Pfautz, and Gabriel Ganberg</td>
<td></td>
</tr>
<tr>
<td>User Situation-Aware Mobile Communication Method</td>
<td>508</td>
</tr>
<tr>
<td>Jungkiih Hong, Scott Song, Dongseok Kim, and Minseok Kim</td>
<td></td>
</tr>
<tr>
<td>Design Guideline on Location Based User Emotion Sharing Map Service</td>
<td>514</td>
</tr>
<tr>
<td>GeeYoung Noh, DongNyeok Jeong, Sangsun Park, and Jundong Cho</td>
<td></td>
</tr>
<tr>
<td>AR-Technology-Based Locationing System for Interactive Content</td>
<td>519</td>
</tr>
<tr>
<td>Satoshi Saga, Ryota Oki, Shusuke Kawagoe, Wanjia Zheng, and Jiachen Sun</td>
<td></td>
</tr>
<tr>
<td>A Computational Location Model Based on Relative Information</td>
<td>525</td>
</tr>
<tr>
<td>Ruowei Xiao, Kazunori Sugiura, and Zhanwei Wu</td>
<td></td>
</tr>
<tr>
<td><strong>Urban Interaction</strong></td>
<td></td>
</tr>
<tr>
<td>Acceptance of Integrated Active Safety Systems in China</td>
<td>533</td>
</tr>
<tr>
<td>Junliang Chen, Zhengjie Liu, Paul A. Mendoza, and Fang Chen</td>
<td></td>
</tr>
<tr>
<td>Interactive Navigation System for the Visually Impaired with Auditory and Haptic Cues in Crosswalks, Indoors and Urban Areas</td>
<td>539</td>
</tr>
<tr>
<td>Tianqi “Tenchi” Gao Smith, Christopher Rose, Jeffrey “Wayne” Nolen, Daniel Pierce, and Alexander Sherman</td>
<td></td>
</tr>
</tbody>
</table>
Domestic Electricity Consumption Visualized as Flowing Tap Water to Raise the Feeling of Waste. ................................. 546
Yukio Ishihara, Makio Ishihara, Fumi Hirayama, and Keiji Yasukawa

Novel Route Depiction Method Based on Light Information for Map Applications. ........................................... 551
Namgyu Kang and Kana Takahashi

Exploration of Building-Occupant Communication Methods for Reducing Energy Consumption in Buildings ................... 558
Saba Khashe, Arsalan Heydarian, Joao Carneiro, and Burcin Becerik-Gerber

Survey Report of Wayfinding Experience Within Cities in China .......... 564
Fung Ha Sandy Lai

Algorithm to Estimate a Living Area Based on Connectivity of Places with Home .................................................. 570
Yuji Matsuo, Sunao Hara, and Masanobu Abe

Design of Interactive Instruction Systems for Travelers and Short-Term Visitors .................................................. 577
Nuttaporn Noithong and Makio Ishihara

Lessons Learned from the Development of a Rural Real Time Passenger Information System ........................................ 582
Konstantinos Papangelis, Somayajulu Sripada, John D. Nelson, and Mark Beecroft

A Market Analysis of Urban Interaction Design ................................. 587
Gianluca Zaffiro, Melissa Bracuto, Martin Brynskov, and Michael Smyth

Innovation Research on Service Design Collaboration Paths Oriented to Smart Cities - A Case Study in Living Lab ................. 592
Yangshuo Zheng, Zhiyong Fu, and Taiping Zhu

Automotive and Aviation

Multiple Scales Pilot Action Pattern Recognition During Flight Task Using Video Surveillance ........................................ 601
Lu Ding, Jia Bo, Qi Wu, HaiYan Liu, and Shan Fu

Attentional Switch Characteristics are Correlated with the Performance of Simulated Aviation Task ........................... 605
Feng Du, Jie Zhang, and Mengnuo Dai
Measuring Trust of Autonomous Vehicles: A Development and Validation Study
David Garcia, Christine Kreutzer, Karla Badillo-Urquiola, and Mustapha Mouloua

The Effects of Automation Reliability and Multi-tasking on Trust and Reliance in a Simulated Unmanned System Control Task
Svyatoslav Guznov, Alexander Nelson, Joseph Lyons, and David Dycus

Enhancement of Performance by Automotive Display Design that Applied Proximity Compatibility Principle (PCP)
Atsuo Murata and Takaaki Akazawa

A Cognitive Systems Engineering Perspective on Fighter Cockpit Design Evaluation
Susanna Nilsson, Britta Levin, Staffan Nählinger, Jens Alfredson, Ulrika Ohlander, and Johan Holmberg

Design and User Studies

Information Assurance Practices in Saudi Arabian Organizations
Abdulaziz Alarifi

User Exploration of Search Space Using Tradeoffs
Zachi Baharav and David S. Gladstein

Usability Evaluation of the Smart TV
Wen-Te Chang, Kuo-Chen Huang, and Ching-Chang Chuang

Usability of the Submission Process in a Journal System
Ronnie Fagundes de Brito and Milton Shintaku

Survey on Copyright Infringement of Digital Contents: A Case Study of Japanese University Students
Rieko Inaba and Remi Yamazaki

A Branch-Type Slider and its Application
Makio Ishihara, Erika Koriyama, and Yukio Ishihara

Airbrush Metaphor and its Application
Makio Ishihara, Yuta Nakazaki, and Yukio Ishihara

Manipulating Animation Speed of Progress Bars to Shorten Time Perception
Yuma Kuroki and Makio Ishihara
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Differences of User Perceived Interactivity Between Two Features of Web Site Design</td>
<td>674</td>
</tr>
<tr>
<td>Juihsiang Lee</td>
<td></td>
</tr>
<tr>
<td>Comparing and Exploring New Text Entry and Edit Methods for Smart TV</td>
<td>680</td>
</tr>
<tr>
<td>Jingtian Li and Young Mi Choi</td>
<td></td>
</tr>
<tr>
<td>Ergonomic Visualization of Logistical Control Parameters for Flexible Production Planning and Control in Future Manufacturing Systems</td>
<td>684</td>
</tr>
<tr>
<td>Jochen Nelles, Sinem Kuz, and Christopher M. Schlick</td>
<td></td>
</tr>
<tr>
<td>Can You Judge a Video Game by Its Cover? An Exploration of Subjective Impressions and Viewing Patterns</td>
<td>690</td>
</tr>
<tr>
<td>Mikki H. Phan, Jibo He, and Barbara S. Chaparro</td>
<td></td>
</tr>
<tr>
<td>Questionnaire for User Habits of Compute Clusters (QUHCC)</td>
<td>697</td>
</tr>
<tr>
<td>Johanna Renker, Stephan Schlagkamp, and Gerhard Rinkenauer</td>
<td></td>
</tr>
<tr>
<td>Usability Assessment of a Suicide Intervention-Prevention Mini-Game</td>
<td>703</td>
</tr>
<tr>
<td>Joan M. Savage</td>
<td></td>
</tr>
<tr>
<td>Acceptance of Waiting Times in High Performance Computing</td>
<td>709</td>
</tr>
<tr>
<td>Stephan Schlagkamp and Johanna Renker</td>
<td></td>
</tr>
<tr>
<td>Analysis on the Influencing Factors of the Comprehensibility of Graphical Symbols</td>
<td>715</td>
</tr>
<tr>
<td>Chuan-Yu Zou, Fan Zhang, and Huimin Hu</td>
<td></td>
</tr>
<tr>
<td>Author Index</td>
<td>723</td>
</tr>
</tbody>
</table>
HCI International 2015 - Posters' Extended Abstracts
Stephanidis, C. (Ed.)
2015, XXXV, 778 p. 341 illus., Softcover
ISBN: 978-3-319-21379-8