Contents – Part II

Mobile Interaction and Smart Devices

Is Touch-Based Text Input Practical for a Smartwatch? . . . . . . . . . . . . . . . . 3
   Barbara S. Chaparro, Jibo He, Colton Turner, and Kirsten Turner

User Recognition and Preference of App Icon Styelization Design
   on the Smartphone . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 9
   Chun-Ching Chen

Towards Personalized Interfaces for Mobile Applications
Using a Natural Text-Based Interaction . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 16
   Yi Ji, Chek Tien Tan, and Ernest Edmonds

Can Color Tell? Smartphone LED Notification Color and Users’ Perception
of the Situation . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 22
   Minsun Kim, Yongjae Kim, Jaeyoung Ji, Jiyoung Hong, Jinhae Coi,
   and Kwang-Hee Han

A Suggestion for a Smartphone Video Player Interface . . . . . . . . . . . . . . . . 27
   Gyu Hong Kyung

Implications of HCI in Energy Consumption Between Native
and Rich-Client Applications for Navigations Widgets in Tablets . . . . . . . . . . . . 32
   Ana Belem Márquez Quintos, Amilcar Meneses Viveros,
   and Erika Hernández Rubio

Adaptive UI from Human Behavior Pattern on Small Screen Interface:
Focused on Double-Swipe Interface . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 39
   Hee-Seung Moon and Da Young Ju

Hyper Panel System: Display System for Poster Layouts
with Detailed Contents . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 45
   Hiroshi Suzuki, Akira Hattori, Hisashi Sato, and Haruo Hayami

Operation Sound Influence on Tablet Device Character Input Operation . . . . . . 51
   Won-Seok Yang, Haruumi Kondo, and Wang-Mi Seok

Social Media

Virtually Augmented Social Skills Training . . . . . . . . . . . . . . . . . . . . . . . . . . . 59
   Kevin Ambrose
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 Kucuekbalaban, 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 Josè 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. . . . 340
   Qi Luo and Tianbiao Zhang

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

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

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

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

Assistive Technologies and Environments

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

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

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

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

Development of Serious Game for the Upper Arms Rehabilitation:
“Balance Ball Rhythm Game” Case Study . . . . . . . . . . . . . . . . . . . . . . . . . . 392
   Sung-Taek Chung, Sung-Wook Shin, and C.J. Lim
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
An Investigation of the Usability and Desirability of Health and Fitness-Tracking Devices .................................................. 473  
Ashton Pfannenstiel and Barbara S. Chaparro

Development of an Open Electronics User Interface for Lower Member Occupational Health Care Exergaming ........................................ 478  
Estefania Ramos-Montilla and Alvaro Uribe-Quevedo

Impact of Intermittent Stretching Exercise Animation on Prolonged-Sitting Computer Users’ Attention and Work Performance ................. 484  
Sy-Chyi Wang and Jin-Yuan Chern

Location and Context Awareness

Dynamic Adaptation of Personalised Recommendations Based on Tourists’ Affective State ..................................................... 491  
Petr Aksenov, Andres Navarro, David Oyarzun, Theo Arentze, and Astrid Kemperman

Dynamic Operations Wayfinding System (DOWS) for Nuclear Power Plants ................................................................. 497  
Ronald L. Boring, Thomas A. Ulrich, and Roger T. Lew

Context-Aware Systems for Complex Data Analysis ....................... 503  
Adam Fouse, Stacy Pfautz, and Gabriel Ganberg

User Situation-Aware Mobile Communication Method .................. 508  
Jungkii Hong, Scott Song, Dongseok Kim, and Minseok Kim

Design Guideline on Location Based User Emotion Sharing Map Service ................................................................. 514  
GeeYoung Noh, DongNyeok Jeong, Sangsun Park, and Jundong Cho

AR-Technology-Based Locationing System for Interactive Content .......................................................... 519  
Satoshi Saga, Ryota Oki, Shusuke Kawagoe, Wanjia Zheng, and Jiacheng Sun

A Computational Location Model Based on Relative Information ........ 525  
Ruowei Xiao, Kazunori Sugiura, and Zhanwei Wu

Urban Interaction

Acceptance of Integrated Active Safety Systems in China ............... 533  
Junliang Chen, Zhengjie Liu, Paul A. Mendoza, and Fang Chen

Interactive Navigation System for the Visually Impaired with Auditory and Haptic Cues in Crosswalks, Indoors and Urban Areas ........... 539  
Tianqi “Tenchi” Gao Smith, Christopher Rose, Jeffrey “Wayne” Nolen, Daniel Pierce, and Alexander Sherman
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 Nählinder, 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>Title</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><strong>Author Index</strong></td>
<td>723</td>
</tr>
</tbody>
</table>
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. Cecilia 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, Shun’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
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Usability in Mass Media via Discourse Analysis: A Case Study</td>
<td>60</td>
</tr>
<tr>
<td><em>Stefanie Niklander, Ricardo Soto, and Broderick Crawford</em></td>
<td></td>
</tr>
<tr>
<td>International and Regional Standards for Usability and User Experience</td>
<td>64</td>
</tr>
<tr>
<td><em>Linghua Ran, Yanfang Liu, Wen Li, and Xin Zhang</em></td>
<td></td>
</tr>
<tr>
<td>A Framework Proposal of UX Evaluation of the Contents Consistency</td>
<td>69</td>
</tr>
<tr>
<td><em>Wangmi Seok</em></td>
<td></td>
</tr>
<tr>
<td>Assessing Usability of a Post-Mission Reporting Technology:</td>
<td>74</td>
</tr>
<tr>
<td>A Novel Usability Questionnaire in Practice</td>
<td></td>
</tr>
<tr>
<td><em>Mitchell J. Tindall and Beth F. Wheeler Atkinson</em></td>
<td></td>
</tr>
<tr>
<td>Validated Usability Heuristics: Defining Categories and Design Guidance</td>
<td>79</td>
</tr>
<tr>
<td><em>Beth F. Wheeler Atkinson, Mitchell J. Tindall, and Gregory S. Igel</em></td>
<td></td>
</tr>
</tbody>
</table>

### Cognitive and Psychological Issues in HCI

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Tracking Analysis of Readers’ Psychological Interaction</td>
<td>87</td>
</tr>
<tr>
<td>with Marketing Copy Referencing Life Values</td>
<td></td>
</tr>
<tr>
<td><em>Miao-Hsien Chuang, Chin-Lung Chen, and Jui-Ping Ma</em></td>
<td></td>
</tr>
<tr>
<td>Questionnaire Survey on Attention of Young Adults</td>
<td>93</td>
</tr>
<tr>
<td><em>Junmin Du, Weiyu Sun, and Xiaofan Wang</em></td>
<td></td>
</tr>
<tr>
<td>Spatial Effect of Target Display on Visual Search</td>
<td>98</td>
</tr>
<tr>
<td><em>Xiaoli Fan, Zhongqi Liu, Qianxiang Zhou, and Fang Xie</em></td>
<td></td>
</tr>
<tr>
<td>Influence of Color Combination Pattern Considered Usability</td>
<td>104</td>
</tr>
<tr>
<td>to Mental Workload</td>
<td></td>
</tr>
<tr>
<td>*Shin’ichi Fukuzumi, Keiko Kasamatsu, Yusuke Ohta, Hideo Jingu,</td>
<td></td>
</tr>
<tr>
<td>Nobuyuki Watanabe, and Yukiko Tanikawa*</td>
<td></td>
</tr>
<tr>
<td>Emotion Elicitation Using Film Clips: Effect of Age Groups on Movie</td>
<td>110</td>
</tr>
<tr>
<td>Choice and Emotion Rating</td>
<td></td>
</tr>
<tr>
<td>*Dilana Hazer, Xueyao Ma, Stefanie Rukavina, Sascha Gruss,</td>
<td></td>
</tr>
<tr>
<td>Steffen Walter, and Harald C. Traue*</td>
<td></td>
</tr>
<tr>
<td>Examining the Gender Gap in Information Assurance:</td>
<td>117</td>
</tr>
<tr>
<td>A Study of Psychological Factors</td>
<td></td>
</tr>
<tr>
<td><em>Hsiao-Ying Huang and Masooda Bashir</em></td>
<td></td>
</tr>
<tr>
<td>Development of a Research Framework to Elicit the Optimal Level of</td>
<td>123</td>
</tr>
<tr>
<td>Users’ Functional Intervention</td>
<td></td>
</tr>
<tr>
<td><em>Song Jung and Sangwon Lee</em></td>
<td></td>
</tr>
</tbody>
</table>
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 Kahler, 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........................... 270
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. ......................... 276
Chaoxiang Yang, Zhang Zhang, Xu Yang, and Xiaohan Le

Design for Aging

Strengthening Connections: Intuitive Interfaces for Life Story Work in Elder Care ................................................................. 287
Mahdi Chaker, Michael Cimerola, and Marietta Scanlon

The Effect of Age on Perception and Preference of App Icon Styles .......... 293
Chiwu Huang and Po-Ti Chen

An iPad Application Prototype to Enhance Memory of Older Adults .......... 299
Wonsil Jang

Applying Usability Test to Find the Interface Design Principle of HRV Device for Senior Users .................................................. 305
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 ............ 311
Rony Oosterom-Caló, Kyle Vice, and Michael Breslow

The Speech Recognition Ability for Different Age Groups on the Chinese Language System ..................................................... 317
Linghua Ran, Ling Luo, Xin Zhang, Taijie Liu, and Chaoyi Zhao

Family Channel: Accessible Social Media for Older Adults .................. 321
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 .......................... 327
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 ......................... 334
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 Fakhrhosseini, 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
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
Local Learning Multiple Probabilistic Linear Discriminant Analysis       604
   Yi Yang and Jiasong Sun

Information Processing and Extraction for HCI

Predicting and Visualizing Wine Characteristics Through Analysis
of Tasting Notes from Viewpoints.                                      613
   Brendan Flanagan, Nao Wariishi, Takahiko Suzuki,
   and Sachio Hirokawa

Extraction of Key Segments from Day-Long Sound Data.                  620
   Akinori Kasai, Sunao Hara, and Masanobu Abe

A Model of Decision Support Based on Estimation of Group Status
by Using Conversation Analysis                                       627
   Susumu Kono and Kenro Aihara

Computer System for Musicians and Composers to Analyze Music
Composition Process                                                   633
   Tetsuya Maeshiro and Midori Maeshiro

Using Structural Topic Modeling to Detect Events and Cluster Twitter
Users in the Ukrainian Crisis                                         639
   Alan Mishler, Erin Smith Crabb, Susannah Paletz, Brook Hefright,
   and Ewa Golonka

Improvement of Chance Index in Consideration of Cluster Information    645
   Ryosuke Saga and Yukihiro Takayama

Knowledge Extraction from Web Reviews Using Feature Selection
Based on Onomatopoeia                                                 650
   Fumiaki Saitoh, Hikaru Aoki, and Shohei Ishizu

Reading Between the Lines: A Prototype Model for Detecting Twitter
Sockpuppet Accounts Using Language-Agnostic Processes.                656
   Erin Smith Crabb, Alan Mishler, Susannah Paletz, Brook Hefright,
   and Ewa Golonka

Processing Specialized Terminology in Multilingual Applications:
An Interactive Approach                                               662
   Christina Valavani, Christina Alexandris, Stefanos Tassis,
   and Antonios Iliakis

Image and Video Processing for HCI

Texture Image Segmentation Using Spectral Clustering                  671
   Hui Du, Yuping Wang, Xiaopan Dong, and Yiu-ming Cheung
An Adaptive Particle Filtering for Solving Occlusion Problems
of Video Tracking .......................................................... 677
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) ........................................... 683
Tetsuya Haneta, Hiroyo Ohishi, Tadasuke Furuya,
and Takahiro Takemoto

A Method of Automatic Cage Generation for Shape Deformation
by Using Elastic Models ................................................... 690
Takayuki Kanaya, Yuta Muraki, Koji Nishio, and Kenichi Kobori

Employing Mobile Applications in Human-Machine Interaction
in Visual Pattern Recognition Research .............................. 696
Amir Schur and Charles C. Tappert

How to Tune a Random Forest for Real-Time Segmentation
in Safe Human-Robot Collaboration? .................................. 700
Vivek Sharma, Frank Dittrich, Şule Yildirim-Yayilgan, Ali Shariq Imran,
and Heinz Wörn

Brain and Physiological Parameters Monitoring

The Estimation of Taste Preference Based on Prefrontal Cortex Activity . . . 707
Hirotoshi Asano

Is the Mood Really in the Eye of the Beholder? ......................... 712
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 ........................ 718
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? .......... 724
Andrew Levine

Development of a Glasses-Like Wearable Device to Measure Nasal
Skin Temperature .......................................................... 727
Tota Mizuno and Yuichiro Kume

Decoding of Upper Limb Movement Using EEG and Sparse Coding .... 733
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