Table of Contents

Part I: Novel Techniques for Measuring and Monitoring

Automatic Method for Measuring Eye Blinks Using Split-Interlaced Images	3
A Usability Study of WebMaps with Eye Tracking Tool: The Effects of Iconic Representation of Information	12
Feature Extraction and Selection for Inferring User Engagement in an HCI Environment	22
Informative or Misleading? Heatmaps Deconstructed	30
Toward EEG Sensing of Imagined Speech	40
Monitoring and Processing of the Pupil Diameter Signal for Affective Assessment of a Computer User Ying Gao, Armando Barreto, and Malek Adjouadi	49
Usability Evaluation by Monitoring Physiological and Other Data Simultaneously with a Time-Resolution of Only a Few Seconds	59
Study of Human Anxiety on the Internet	69
The Research on Adaptive Process for Emotion Recognition by Using Time-Dependent Parameters of Autonomic Nervous Response	77
Students' Visual Perceptions of Virtual Lectures as Measured by Eye Tracking	85
Toward Constructing an Electroencephalogram Measurement Method for Usability Evaluation	95

Automated Analysis of Eye-Tracking Data for the Evaluation of Driver Information Systems According to ISO/TS 15007-2:2001	105
Brain Response to Good and Bad Design	111
An Analysis of Eye Movements during Browsing Multiple Search Results Pages	121
Development of Estimation System for Concentrate Situation Using Acceleration Sensor	131
Psychophysiology as a Tool for HCI Research: Promises and Pitfalls $Byungho\ Park$	141
Assessing NeuroSky's Usability to Detect Attention Levels in an Assessment Exercise	149
Effect of Body Movement on Music Expressivity in Jazz Performances	159
A Method to Monitor Operator Overloading Dvijesh Shastri, Ioannis Pavlidis, and Avinash Wesley	169
Decoding Attentional Orientation from EEG Spectra	176
On the Possibility about Performance Estimation Just before Beginning a Voluntary Motion Using Movement Related Cortical Potential Satoshi Suzuki, Takemi Matsui, Yusuke Sakaguchi, Kazuhiro Ando, Nobuyuki Nishiuchi, Toshimasa Yamazaki, and Shin'ichi Fukuzumi	184
Part II: Evaluation Methods, Techniques and Tools	
A Usability Evaluation Method Applying AHP and Treemap Techniques	195
Toshiyuki Asahi, Teruya Ikegami, and Shin'ichi Fukuzumi	100

Evaluation of User-Interfaces for Mobile Application Development Environments	20
User-Centered Design and Evaluation – The Big Picture	21
Web-Based System Development for Usability Evaluation of Ubiquitous Computing Device	22
Evaluating Mobile Usability: The Role of Fidelity in Full-Scale Laboratory Simulations with Mobile ICT for Hospitals	23
A Multidimensional Approach for the Evaluation of Mobile Application User Interfaces	24
Development of Quantitative Usability Evaluation Method	28
Reference Model for Quality Assurance of Speech Applications Cornelia Hipp and Matthias Peissner	2
Toward Cognitive Modeling for Predicting Usability	20
Webjig: An Automated User Data Collection System for Website Usability Evaluation	2'
ADiEU: Toward Domain-Based Evaluation of Spoken Dialog Systems Jan Kleindienst, Jan Cuřín, and Martin Labský	2
Interpretation of User Evaluation for Emotional Speech Synthesis System	2
Multi-level Validation of the ISOmetrics Questionnaire Based on Qualitative and Quantitative Data Obtained from a Conventional Usability Test	3
What Do Users Really Do? Experience Sampling in the 21st Century $Gavin\ S.\ Lew$	3
Evaluating Usability-Supporting Architecture Patterns: Reactions from Usability Professionals	3

Heuristic Evaluations of Bioinformatics Tools: A Development Case Barbara Mirel and Zach Wright	329
A Prototype to Validate ErgoCoIn: A Web Site Ergonomic Inspection Technique	339
Mobile Phone Usability Questionnaire (MPUQ) and Automated Usability Evaluation	349
Estimating Productivity: Composite Operators for Keystroke Level Modeling	352
Paper to Electronic Questionnaires: Effects on Structured Questionnaire Forms	362
Website Designer as an Evaluator: A Formative Evaluation Method for Website Interface Development	372
Part III: User Studies	
Building on the Usability Study: Two Explorations on How to Better Understand an Interface	385
Measuring User Performance for Different Interfaces Using a Word Processor Prototype	395
Evaluating User Effectiveness in Exploratory Search with TouchGraph Google Interface	405
What Do Users Want to See? A Content Preparation Study for Consumer Electronics	413
"I Love My iPhone But There Are Certain Things That 'Niggle' Me"	421
Anna Haywood and Gemma Boguslawski	721

Acceptance of Future Technologies Using Personal Data: A Focus Group with Young Internet Users	431
Analysis of Breakdowns in Menu-Based Interaction Based on Information Scent Model	438
E-Shopping Behavior and User-Web Interaction for Developing a Useful Green Website	446
Interaction Comparison among Media Internet Genre	455
Comparing the Usability of the Icons and Functions between IE6.0 and IE7.0	465
Goods-Finding and Orientation in the Elderly on 3D Virtual Store Interface: The Impact of Classification and Landmarks	474
Effects of Gender Difference on Emergency Operation Interface Design in Semiconductor Industry	484
Evaluating a Personal Communication Tool: Sidebar	490
"You've Got IMs!" How People Manage Concurrent Instant Messages Shailendra Rao, Judy Chen, Robin Jeffries, and Richard Boardman	500
Investigating Children Preferences of a User Interface Design	510
Usability Evaluation of Graphic Design for Ilmu's Interface	514
Are We Trapped by Majority Influences in Electronic Word-of-Mouth?	520

Leveraging a User Research Framework to Guide Research Investments: Windows Vista Case Study	530
A Usability Evaluation of Public Icon Interface	540
Part IV: User Interface Design	
Little Design Up-Front: A Design Science Approach to Integrating Usability into Agile Requirements Engineering	549
Aesthetics in Human-Computer Interaction: Views and Reviews Salah Uddin Ahmed, Abdullah Al Mahmud, and Kristin Bergaust	559
Providing an Efficient Way to Make Desktop Icons Visible	569
An Integration of Task and Use-Case Meta-models	579
Model-Based Specification and Validation of User Interface Requirements	587
A Position Paper on 'Living Laboratories': Rethinking Ecological Designs and Experimentation in Human-Computer Interaction Ed H. Chi	597
Embodied Interaction or Context-Aware Computing? An Integrated Approach to Design	606
Supporting Multidisciplinary Teams and Early Design Stages Using Storyboards	616
Agent-Based Architecture for Interactive System Design: Current Approaches, Perspectives and Evaluation	624
BunBunMovie: Scenario Visualizing System Based on 3-D Character Tomoya Matsuo and Takashi Yoshino	634
Augmented Collaborative Card-Based Creative Activity with Digital	644
Pens	044

Time-Oriented Interface Design: Picking the Right Time and Method for Information Presentation

Keita Watanabe, Kei Sugawara, Shota Matsuda, and

Douglas Xiaoyong Wang

Michiaki Yasumura

745

752

Enabling Interactive Access to Web Tables	760
Integration of Creativity into Website Design	769
Part V: Development Approaches, Methods and Tools	
YVision: A General Purpose Software Composition Framework Antão Almada, Gonçalo Lopes, André Almeida, João Frazão, and Nuno Cardoso	779
Collaborative Development and New Devices for Human-Computer	
Interaction	789
Orchestration Modeling of Interactive Systems	796
An Exploration of Perspective Changes within MBD	806
Rapid Development of Scoped User Interfaces	816
PaMGIS: A Framework for Pattern-Based Modeling and Generation of Interactive Systems	826
People-Oriented Programming: From Agent-Oriented Analysis to the Design of Interactive Systems	836
Visualization of Software and Systems as Support Mechanism for Integrated Software Project Control	846
Collage: A Declarative Programming Model for Compositional Development of Web Applications Bruce Lucas, Rahul Akolkar, and Charlie Wiecha	856
Hypernetwork Model to Represent Similarity Details Applied to Musical Instrument Performance	866

Open Collaborative Development: Trends, Tools, and Tactics	874
Investigating the Run Time Behavior of Distributed Applications by Using Tiny Java Virtual Machines with Wireless Communications Tsuyoshi Miyazaki, Takayuki Suzuki, and Fujio Yamamoto	882
OntoDesk: Ontology-Based Persistent System-Wide Undo on the Desktop	890
Peer-to-Peer File Sharing Communication Detection System with Traffic Mining and Visualization	900
Author Index	911