

# Table of Contents – Part IV

## Speech, Natural Language and Auditory Interfaces

Controlling Interaction in Multilingual Conversation . . . . .	3
<i>Christina Alexandris</i>	
Linguistic Processing of Implied Information and Connotative Features in Multilingual HCI Applications . . . . .	13
<i>Christina Alexandris and Ioanna Malagardi</i>	
Investigating the Impact of Combining Speech and Earcons to Communicate Information in E-government Interfaces . . . . .	23
<i>Dimitrios Rigas and Badr Almutairi</i>	
Evaluation of WikiTalk – User Studies of Human-Robot Interaction . . .	32
<i>Dimitra Anastasiou, Kristiina Jokinen, and Graham Wilcock</i>	
Robust Multi-Modal Speech Recognition in Two Languages Utilizing Video and Distance Information from the Kinect . . . . .	43
<i>Georgios Galatas, Gerasimos Potamianos, and Fillia Makedon</i>	
The Ecological AUI (Auditory User Interface) Design and Evaluation of User Acceptance for Various Tasks on Smartphones . . . . .	49
<i>Myounghoon Jeon and Ju-Hwan Lee</i>	
Speech-Based Text Correction Patterns in Noisy Environment . . . . .	59
<i>Ladislav Kunc, Tomáš Macek, Martin Labský, and Jan Kleindienst</i>	
Multimodal Smart Interactive Presentation System . . . . .	67
<i>Hoang-An Le, Khoi-Nguyen C. Mac, Truong-An Pham, Vinh-Tiep Nguyen, and Minh-Triet Tran</i>	
Multimodal Mathematical Expressions Recognition: Case of Speech and Handwriting . . . . .	77
<i>Sofiane Medjkoune, Harold Mouchere, Simon Petitrenaud, and Christian Viard-Gaudin</i>	
‘Realness’ in Chatbots: Establishing Quantifiable Criteria . . . . .	87
<i>Kellie Morrissey and Jurek Kirakowski</i>	
Grounding and Turn-Taking in Multimodal Multiparty Conversation ...	97
<i>David Novick and Iván Gris</i>	
Situated Multiparty Interaction between Humans and Agents . . . . .	107
<i>Aasish Pappu, Ming Sun, Seshadri Sridharan, and Alex Rudnicky</i>	

Enhancing Human Computer Interaction with Episodic Memory in a Virtual Guide .....	117
<i>Felix Rabe and Ipke Wachsmuth</i>	
System of Generating Japanese Sound Symbolic Expressions Using Genetic Algorithm .....	126
<i>Yuichiro Shimizu, Tetsuaki Nakamura, and Maki Sakamoto</i>	
A Knowledge Elicitation Study for Collaborative Dialogue Strategies Used to Handle Uncertainties in Speech Communication While Using GIS .....	135
<i>Hongmei Wang, Ava Gailliot, Douglas Hyden, and Ryan Lietzenmayer</i>	
 <b>Gesture and Eye-Gaze Based Interaction</b>	
Context-Based Bounding Volume Morphing in Pointing Gesture Application .....	147
<i>Andreas Braun, Arthur Fischer, Alexander Marinc, Carsten Stockl�w, and Martin Majewski</i>	
Gesture vs. Gesticulation: A Test Protocol .....	157
<i>Francesco Carrino, Antonio Ridi, Rolf Ingold, Omar Abou Khaled, and Elena Mugellini</i>	
Functional Gestures for Human-Environment Interaction .....	167
<i>Stefano Carrino, Maurizio Caon, Omar Abou Khaled, Rolf Ingold, and Elena Mugellini</i>	
A Dynamic Fitting Room Based on Microsoft Kinect and Augmented Reality Technologies .....	177
<i>Hsien-Tsung Chang, Yu-Wen Li, Huan-Ting Chen, Shih-Yi Feng, and Tsung-Tien Chien</i>	
Gesture-Based Applications for Elderly People .....	186
<i>Wei-qin Chen</i>	
MOBAJES: Multi-user Gesture Interaction System with Wearable Mobile Device .....	196
<i>Enkhbat Davaasuren and Jiro Tanaka</i>	
Head-Free, Remote Gaze Detection System Based on Pupil-Corneal Reflection Method with Using Two Video Cameras – One-Point and Nonlinear Calibrations .....	205
<i>Yoshinobu Ebisawa and Kiyotaka Fukumoto</i>	
Design and Usability Analysis of Gesture-Based Control for Common Desktop Tasks .....	215
<i>Farzin Farhadi-Niaki, S. Ali Etemad, and Ali Arya</i>	

Study of Eye-Glance Input Interface . . . . .	225
<i>Dekun Gao, Naoaki Itakura, Tota Mizuno, and Kazuyuki Mito</i>	
Multi-User Interaction with Shadows . . . . .	235
<i>Tomomi Gotoh, Takahiro Kida, Munehiro Takimoto, and Yasushi Kambayashi</i>	
Intent Capturing through Multimodal Inputs . . . . .	243
<i>Weimin Guo, Cheng Cheng, Mingkai Cheng, Yonghan Jiang, and Honglin Tang</i>	
Robust Hand Tracking in Realtime Using a Single Head-Mounted RGB Camera . . . . .	252
<i>Jan Hendrik Hammer and Jürgen Beyerer</i>	
Multimodal Feedback in First Encounter Interactions . . . . .	262
<i>Kristiina Jokinen</i>	
Keyboard Clawing: Input Method by Clawing Key Tops . . . . .	272
<i>Toshifumi Kurosawa, Buntarou Shizuki, and Jiro Tanaka</i>	
Finger Controller: Natural User Interaction Using Finger Gestures . . . . .	281
<i>Unseok Lee and Jiro Tanaka</i>	
A Method for Single Hand Fist Gesture Input to Enhance Human Computer Interaction . . . . .	291
<i>Tao Ma, William Wee, Chia Yung Han, and Xuefu Zhou</i>	
Kinect© as Interaction Device with a Tiled Display . . . . .	301
<i>Amilcar Meneses Viveros and Erika Hernández Rubio</i>	
Study on Cursor Shape Suitable for Eye-gaze Input System . . . . .	312
<i>Atsuo Murata, Raku Uetsugi, and Takehito Hayami</i>	
Study on Character Input Methods Using Eye-gaze Input Interface . . . . .	320
<i>Atsuo Murata, Kazuya Hayashi, Makoto Moriwaka, and Takehito Hayami</i>	
Proposal of Estimation Method of Stable Fixation Points for Eye-gaze Input Interface . . . . .	330
<i>Atsuo Murata, Takehito Hayami, and Keita Ochi</i>	
Modeling Situation-Dependent Nonverbal Expressions for a Pair of Embodied Agent in a Dialogue Based on Conversations in TV Programs . . . . .	340
<i>Keita Okuuchi, Koh Kakusho, Takatsugu Kojima, and Daisuke Katagami</i>	
Research on a Large Digital Desktop Integrated in a Traditional Environment for Informal Collaboration . . . . .	348
<i>Mariano Perez Pelaez, Ryo Suzuki, and Ikuro Choh</i>	

Using Kinect for 2D and 3D Pointing Tasks: Performance Evaluation ...	358
<i>Alexandros Pino, Evangelos Tzemis, Nikolaos Ioannou, and Georgios Kouroupetroglou</i>	
Conditions of Applications, Situations and Functions Applicable to Gesture Interface .....	368
<i>Taebeum Ryu, Jaehong Lee, Myung Hwan Yun, and Ji Hyoun Lim</i>	
Communication Analysis of Remote Collaboration System with Arm Scaling Function .....	378
<i>Nobuchika Sakata, Tomoyuki Kobayashi, and Shogo Nishida</i>	
Two Handed Mid-Air Gestural HCI: Point + Command .....	388
<i>Matthias Schwaller, Simon Brunner, and Denis Lalanne</i>	
Experimental Study Toward Modeling of the Uncanny Valley Based on Eye Movements on Human/Non-human Faces .....	398
<i>Yoshimasa Tawatsuji, Kazuaki Kojima, and Tatsunori Matsui</i>	
Multi-party Human-Machine Interaction Using a Smart Multimodal Digital Signage .....	408
<i>Tony Tung, Randy Gomez, Tatsuya Kawahara, and Takashi Matsuyama</i>	
A Remote Pointing Technique Using Pull-out .....	416
<i>Takuto Yoshikawa, Yuusaku Mita, Takuro Kuribara, Buntarou Shizuki, and Jiro Tanaka</i>	

## Touch-Based Interaction

Human Centered Design Approach to Integrate Touch Screen in Future Aircraft Cockpits .....	429
<i>Jérôme Barbé, Marion Wolff, and Régis Mollard</i>	
Evaluating Devices and Navigation Tools in 3D Environments .....	439
<i>Marcela Câmara, Priscilla Fonseca de Abreu Braz, Ingrid Monteiro, Alberto Raposo, and Simone Diniz Junqueira Barbosa</i>	
Computational Cognitive Modeling of Touch and Gesture on Mobile Multitouch Devices: Applications and Challenges for Existing Theory ...	449
<i>Kristen K. Greene, Franklin P. Tamborello, and Ross J. Micheals</i>	
A Page Navigation Technique for Overlooking Content in a Digital Magazine .....	456
<i>Yuichiro Kinoshita, Masayuki Sugiyama, and Kentaro Go</i>	

Effect of Unresponsive Time for User's Touch Action of Selecting an Icon on the Video Mirror Interface .....	462
<i>Kazuyoshi Murata, Masatsugu Hattori, and Yu Shibuya</i>	
Evaluation of a Soft-Surfaced Multi-touch Interface.....	469
<i>Anna Noguchi, Toshifumi Kurosawa, Ayaka Suzuki, Yuichiro Sakamoto, Tatsuhito Oe, Takuto Yoshikawa, Buntarou Shizuki, and Jiro Tanaka</i>	
Recognition of Multi-touch Drawn Sketches .....	479
<i>Michael Schmidt and Gerhard Weber</i>	
A Web Browsing Method on Handheld Touch Screen Devices for Preventing from Tapping Unintended Links .....	491
<i>Yu Shibuya, Hikaru Kawakatsu, and Kazuyoshi Murata</i>	
Real Time Mono-vision Based Customizable Virtual Keyboard Using Finger Tip Speed Analysis .....	497
<i>Sumit Srivastava and Ramesh Chandra Tripathi</i>	
Human Factor Research of User Interface for 3D Display .....	506
<i>Chih-Hung Ting, Teng-Yao Tsai, Yi-Pai Huang, Wen-Jun Zeng, and Ming-Hui Lin</i>	
Collaborative Smart Virtual Keyboard with Word Predicting Function .....	513
<i>Chau Thai Truong, Duy-Hung Nguyen-Huynh, Minh-Triet Tran, and Anh-Duc Duong</i>	
The Implementation of Multi-touch Table to Support the Military Decision Making through Critical Success Factors (CSFs) .....	523
<i>Norshahriah Wahab and Halimah Badioze Zaman</i>	
Design of a Visual Query Language for Geographic Information System on a Touch Screen .....	530
<i>Siju Wu, Samir Otmane, Guillaume Moreau, and Myriam Servières</i>	
Target Orientation Effects on Movement Time in Rapid Aiming Tasks.....	540
<i>Yugang Zhang, Bifeng Song, and Wensheng Min</i>	
<b>Haptic Interaction</b>	
Comparison of Enhanced Visual and Haptic Features in a Virtual Reality-Based Haptic Simulation .....	551
<i>Michael Clamann, Wenqi Ma, and David B. Kaber</i>	

Influence of Haptic Feedback on a Pointing Task in a Haptically Enhanced 3D Virtual Environment .....	561
<i>Brendan Corbett, Takehiko Yamaguchi, Shijing Liu, Lixiao Huang, Sangwoo Bahn, and Chang S. Nam</i>	
Design of a Wearable Haptic Vest as a Supportive Tool for Navigation .....	568
<i>Anak Agung Gede Dharma, Takuma Oami, Yuhki Obata, Li Yan, and Kiyoshi Tomimatsu</i>	
Mapping Texture Phase Diagram of Artificial Haptic Stimuli Generated by Vibrotactile Actuators .....	578
<i>Anak Agung Gede Dharma and Kiyoshi Tomimatsu</i>	
Preliminary Design of Haptic Icons from Users .....	587
<i>Wonil Hwang and Dongsoo Kim</i>	
Assessing the Effectiveness of Vibrotactile Feedback on a 2D Navigation Task .....	594
<i>Wooram Jeon, Yueqing Li, Sangwoo Bahn, and Chang S. Nam</i>	
Magnetic Field Based Near Surface Haptic and Pointing Interface .....	601
<i>Kasun Karunanayaka, Sanath Siriwardana, Chamari Edirisinghe, Ryohei Nakatsu, and Ponnampalam Gopalakrishnakone</i>	
Use of Reference Frame in Haptic Virtual Environments: Implications for Users with Visual Impairments .....	610
<i>Ja Young Lee, Sangwoo Bahn, and Chang S. Nam</i>	
Behavioral Characteristics of Users with Visual Impairment in Haptically Enhanced Virtual Environments .....	618
<i>Shijing Liu, Sangwoo Bahn, Heesun Choi, and Chang S. Nam</i>	

Graphical User Interfaces and Visualisation

A Situation Awareness Assistant for Human Deep Space Exploration ...	629
<i>Guy Andre Boy and Donald Platt</i>	
My-World-in-My-Tablet: An Architecture for People with Physical Impairment .....	637
<i>Mario Caruso, Febo Cincotti, Francesco Leotta, Massimo Mecella, Angela Riccio, Francesca Schettini, Luca Simione, and Tiziana Catarci</i>	
AHPM as a Proposal to Improve Interaction with Air Traffic Controllers .....	648
<i>Leonardo L.B.V. Cruciol and Li Weigang</i>	

Decision Space Visualization: Lessons Learned and Design Principles ...	658
<i>Jill L. Drury, Mark S. Pfaff, Gary L. Klein, and Yikun Liu</i>	
The Language of Motion: A Taxonomy for Interface .....	668
<i>Elaine Froehlich, Brian Lucid, and Heather Shaw</i>	
Adaptive Consoles for Supervisory Control of Multiple Unmanned Aerial Vehicles.....	678
<i>Christian Fuchs, Sérgio Ferreira, João Sousa, and Gil Gonçalves</i>	
A Web-Based Interface for a System That Designs Sensor Networks ....	688
<i>Lawrence J. Henschen and Julia C. Lee</i>	
An Interaction Concept for Public Displays and Mobile Devices in Public Transport.....	698
<i>Romina Kühn, Diana Lemme, and Thomas Schlegel</i>	
Study of Interaction Concepts in 3D Virtual Environment.....	706
<i>Vera Oblaender and Maximilian Eibl</i>	
Undo/Redo by Trajectory.....	712
<i>Tatsuhito Oe, Buntarou Shizuki, and Jiro Tanaka</i>	
Multi-layer Control and Graphical Feature Editing Using Server-Side Rendering on Ajax-GIS .....	722
<i>Takeo Sakairi, Takashi Tamada, Katsuyuki Kamei, and Yukio Goto</i>	
A Method for Discussing Musical Expression between Music Ensemble Players Using a Web-Based System.....	730
<i>Takehiko Sakamoto, Shin Takahashi, and Jiro Tanaka</i>	
A Study on Document Retrieval System Based on Visualization to Manage OCR Documents .....	740
<i>Kazuki Tamura, Tomohiro Yoshikawa, and Takeshi Furuhashi</i>	
Audio-Visual Documentation Method for Digital Storytelling for a Multimedia Art Project.....	750
<i>Chui Yin Wong, Chee Weng Khong, Kimberly Chu, Muhammad Asyraf Mhd Pauzi, and Man Leong Wong</i>	
Author Index .....	759