2017 10th International Conference on Human System Interactions (HSI 2017)

Ulsan, South Korea
17 – 19 July 2017

IEEE Catalog Number: CFP1721D-POD
ISBN: 978-1-5090-5613-2

Copyright © 2017 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP1721D-POD
ISBN (Print-On-Demand):	978-1-5090-5613-2
ISBN (Online):	978-1-5090-4688-1
ISSN:	2158-2246

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

Table of Contents

Welcome Message 1

Program Committees 2

Reviewers List 4

Interaction with Users in Home and Mobile Systems **5**

Using Wearable Device for Biomedical Signal Acquisition and Processing 6
Tomasz Kocejko, Artur Polinski, Anna Giczewska, Jerzy Wtorek

Extending Touch-less Interaction with Smart Glasses by Implementing EMG Module 12
Tomasz Kocejko, Krzysztof Czuszynski, Jacek Ruminski, Adam Bujnowski, Artur Polinski, Jerzy Wtorek

Pose Classification in the Gesture Recognition Using the Linear Optical Sensor 18
Krzysztof Czuszynski, Jacek Ruminski, Jerzy Wtorek

A Navigation Device Utilizing Body Communication Channel for Mobile Wearable Systems 25
Adam Bujnowski, Kamil Osinski, Jerzy Wtorek

Playback Detection Using Machine Learning with Spectrogram Features Approach 31
Jerzy Dembski, Jacek Ruminski

The Role of EMG Module in Hybrid Interface of Prosthetic Arm 36
Tomasz Kocejko, Jacek Ruminski, Piotr Przystup, Artur Polinski, Jerzy Wtorek

Deep Features Class Activation Map for Thermal Face Detection and Tracking. 41
Alicja Kwasniewska, Jacek Ruminski, Paul Rad

Vision-based Intelligent Surveillance System 48

Object Classification for LIDAR Data using Encoded Features 49
Laksono Kurnianggoro, Kang-Hyun Jo

Baggage Detection and Classification Using Human Body Parameter & Boosting Technique 54
Tahmina Khanam, Kaushik Deb, Kang-Hyun Jo

Sterile Zone Monitoring with Human Verification 60
Ajmal Shahbaz, Wahyono, Kang-Hyun Jo

Comparative Study of Modern Convolutional Neural Networks for Smoke Detection on Image Data 64
Alexander Filonenko, Laksono Kurnianggoro, Kang-Hyun Jo

Video Based Pedestrian Detection and Tracking at Night-time 69
Geun-Hoo Lee, Gyu-Yeong Kim, Jong-Kwan Song, Omer Faruk Ince, Jang-Sik Park

Information Technology for Education and Training 73

The Influence of Facility Design Differentiation and Human Resource Management on Mental Health Rehabilitation 74
Agus Masrukhin, Adie Erar Yusuf

Interacting with a Conversational Agent System for Educational Purposes in Online Courses 78
Donggil Song, Eun Young Oh, Marilyn Rice

Web and Virtual Reality as Platforms to Improve Online Education Experiences 83
Diogo Cortiz da Silva, Jefferson Oliveira Silva

The Role of Instant Messaging in Building Virtual Teamwork: A Case Study of Character Education in Binus University 88
Murty Pane, Yustinus Ruman, Iwan Irawan

How Active Are K-12 Students Using Edmodo As Online Motivation, Interaction and Collaboration Tools for Learning Process? 94
Febrianti Widyahastuti, Viany Utami Tjhin, Dendy Fransiskus

Evaluating the Performance of Students through Collaborative Learning, Case Study: Distance Education Program in Indonesia 98
Viany Utami Tjhin, Anita Rahayu, Kiky Soraya

Exploring Effective Learning Resources Affecting Student Behavior on Distance Education 104
Wella, Viany Utami Tjhin

E-Learning Design Model Integrated Eel (Anguilla Sp.) in Indonesia Based on Website 108
Wiwin Windihastuty, Dwi Kristanto

Gender Differences in the Use of SCREAM Rhetorical Devices Displayed on Video Presentations (An Analysis of Undergraduate Students' Persuasive Presentations 111
Joice Yulinda Luke, Kiky Soraya

The Effect of Lecturer Leadership and Organizational Culture on the Students' SPIRIT Character Building 116
Arcadius Benawa, Nikodemus Thomas, Lelo Yosep

Assistive Devices and Monitoring System for Health Care 119

A Wearable Armband "iFeel" for Electrotactile Stimulation N/A
Shaona. Cheng, Dingguo Zhang

Comparison of Brain Area for Executed and Imagined Movements After Motor Training for BCI: An fNIRS Study 125
Muhammad Jawad Khan, Amad Zafar, Keum-Shik Hong

Dimensionality Reduction of EEG Signal using Fuzzy Discernibility Matrix 131
Rajdeep Chatterjee, Tathagata Bandyopadhyay, Debarshi Sanyal, Dibyajyoti Guha

Reduction of Massive EEG Datasets for Epilepsy Analysis Using Artificial Neural Networks 137
Howard J Carey III, Kasun Amarasinghe, Milos Manic

Classification of Human Fall in Top Viewed Kinect Depth Images using Binary 144

Support Vector Machine
Sowmya Kasturi, Kang-Hyun Jo

Design and Development of Low-Cost Assistive Device for Lower Limb Exoskeleton Robot 148
Wanayuth Sanngoen, Setawichock Nillnawarad, Sema Patchim

Human Machine Interaction and Robotics 154

Interaction Content Design for Information Support based on Robot Partner 155
Jinseok Woo, Naoyuki Kubota

An Output Feedback Tracking Control based on Neural Sliding Mode and High Order Sliding Mode Observer 161
Anh-Tuan Vo, Hee-Jun Kang, Van-Cuong Nguyen

Text-to-Speech of a Talking Robot for Interactively Speech Training of Hearing Impaired 166
Thanh Vo Nhu, Hideyuki Sawada

Presentation of Contact Information of Industrial Robot's End-effector Using Vibrotactile Sensation 172
Yamazaki Daisuke, Niitsuma Mihoko

Reaction Force Estimation and Bilateral Control of Master Slave Manipulation Using a Robust Controller 178
Karam Dad, Wang Jie, Saad Jamshed Abbasi, Min Cheol Lee

Artificial Intelligence 182

Fruitylicious: Mobile Application for Fruit Ripeness Determination based on Fruit Image 183
Ni Made Satvika Iswari

Predicting Students' Performance in Final Examination using Linear Regression and Multilayer Perceptron 188
Febrianti Widyahastuti, Viany Utami Tjhin

Pedestrian Navigation Algorithm Using Inertial-based Walking Stick 193
Duc Cong Dang, Young Soo Suh

Surface EMG based Hand Motion Recognition using Combined Growing Neural Gas and Linear Discriminant Analysis 196
Dalin Zhou, Yinfeng Fang, Naoyuki Kubota, Honghai Liu

Improving Sentiment Classification through Distinct Word Selection 202
Heeryon Cho, Sang Min Yoon

A Synthesized Method of Result Merging in Meta-Search Engine 206
Xiao Li Chen, Qing Shan Li, Yi Shuai Lin, Bo-Yu Zhou

Strategy for Automatic Person Indexing and Retrieval System in News Interview Video Sequences 212
Sanghee Lee, Kang-Hyun Jo

To Classify Two-dimensional Motion State of Step Length and Walking Speed by Applying Cerebral Hemoglobin Information 216
Jin Hedian, Li Chunguang, Sun Lining, Hu Haiyan, Xu Jiacheng, Qu Wei

Computer Vision 223

Evaluation of Feature Based Image Stitching Algorithm using OpenCV 224
You-Jin Ha, Hyun-Deok Kang

An Improved Method for 3D Shape Estimation using Active Shape Model 230
Van-Thanh Hoang, Kang-Hyun Jo

Lane Marking Detection Using Image Features and Line Fitting Models 234
Danilo Cáceres Hernández, Alexander Filonenko, Ajmal Shahbaz, Kang-Hyun Jo

Car Plate Recognition Based on CNN Using Embedded System with GPU 239
Sanghyeop Lee, Hyuntae Kim, Keumyoung Son, Jangsik Park

Multi-Layer Superpixel-Based MeshStereo for Accurate Stereo Matching 242
Dongwook Seo, Kang-Hyun Jo

Virtual Designs and Reconstructions of Amber Works (Amber Craftsman Simulator) 246
Jacek Lebiedz, Jerzy Redlarski, Jacek Ruminski

Technology Design on Human Factors 250

Probabilistic Adjustment of Dwell Time for Eye Typing 251
Jimin Pi, Bertram E. Shi

Stuttgart Exo-Jacket: An Exoskeleton for Industrial Upper Body Applications 258
Amir Ebrahimi

A Low-Cost Implementation of an Eye Tracking System for Driver's Gaze Analysis 264
Simone Guasconi, Marco Porta, Cristiano Resta, Carlo Rottenbacher

Driver Drowsiness Monitoring by Learning Vehicle Telemetry Data 270
Kashyap Vasudevan, Anjana P Das, Sandhya B, Subith P

Dynamic User Interfaces for Control Systems 277
Patrick Sivils, Kasun Amarasinghe, Matthew Anderson, Neal Yancey, Quang Nguyen, Kevin Kenney, Milos Manic

Study on Play Specific to the Saddle Type Interface for Personal Mobility 284
Sho Yokota, Daisuke Chugo, Hiroshi Hashimoto

Enhanced Concert Experience using Multimodal Feedback from Live Performers 290
Kouyou Otsu, Hidekazu Takahashi, Hisato Fukuda, Yoshinori Kobayashi, Yoshinori Kuno

Information System and Interdisciplinary 295

The Acceptance of Social Network: The Role of Status Seeking on TAM 296
Wornchanok Chaiyasoonthorn, Watanyoo Suksa-ngiam

The Perception of Cultural Value towards College Students: A Case Study in Higher Education 302
Dian Anggraini Kusumajati, Yustinus Suhardi Ruman, Rusliansyah Anwar, Kristianus Oktriono

Powerfully Tecnologized, Powerlessly Connected: The Psychosemiotics of Nomophobia 306
Andreas Akun, Wiwik Andreani

The Role of Mass Media to Construct Cosplayer Self Identity, Social Reality and Hyper Reality 311
Rina Patriana Chairiyani, Erni Herawati, Rianna Enny Widayanti

The Growth and Impact of the Internet on the Users_A Research on Internet Phenomena in Indonesia in 2016 317
Petrus Hepi, Petrus Lakonawa

Authors Index 322