

2010 3rd Conference on Human System Interactions

(HSI 2010)

**Rzeszów, Poland
13-15 May 2010**



IEEE Catalog Number: CFP1021D-PRT
ISBN: 978-1-4244-7560-5

TABLE OF CONTENTS

Speech in Human System Interaction	2
<i>Ryszard Tadeusiewicz</i>	
Partner Robots - From Development to Implementation -	14
<i>Yasuhiro Ota</i>	
Electronic Interfaces Aiding the Visually Impaired in Environmental Access, Mobility and Navigation	17
<i>Pawel Strumillo</i>	
Hardware Model of Commonsense Reasoning Based on Fuzzy Default Logic	34
<i>Andrzej Pulka, Adam Milik</i>	
Multiple-Inputs Multiple-Outputs Object Identification Based on Fuzzy Relations and Genetic Algorithm	42
<i>Alexander Rotshtein, Hanna Rakytyanska</i>	
Real Time Evaluation of Inverse Kinematics for a 3-RPS Medical Parallel Robot Using dSpace Platform	48
<i>Ciprian-Radu Rad, Milos Manic, Radu Bălan, Sergiu-Dan Stan</i>	
A Neural Network Based Time Series Forecasting System	59
<i>Bohdan Kozarzewski</i>	
The Use of Genetic Algorithms for the Design of Mechatronic Transmissions with Improved Operating Conditions	63
<i>Tiberiu Alexandru Antal, Adalbert Antal</i>	
A Biometric Identification System Based on Heart Sound Signal	67
<i>Ye-Wei Tao, Xia Sun, Hui-Xiang Zhang, Wei Wu</i>	
Uncertain Data Modeling: The Case of Small and Medium Enterprises	76
<i>Andrzej Burda, Zdzisław S. Hippe</i>	
Application of CBR for Activity-Based Cost Estimation in Steel Enterprises	81
<i>Yajun Wang, Qiunan Meng</i>	
Design and Implementation of MAS in Renewable Energy Power Generation System	85
<i>Shuyun Jia, Jiang Chang</i>	
Daily Activity Learning from Motion Detector Data for Ambient Assisted Living	89
<i>Guoqing Yin, Dietmar Bruckner</i>	
Improved Nearest Neighbor Classifier Based on Local Space Inversion	95
<i>Zbigniew Szymanski, Marek P. Dwulit</i>	
A Temporal-Spatial Data Fusion Architecture for Monitoring Complex Systems	101
<i>Kevin McCarty, Milos Manic, Shane Cherry, Miles McQueen</i>	
Optimization of Tag Recommender Systems in a Real Life Setting	107
<i>Szymon Chojnacki, Dariusz Czernski, Mieczysław Kłopotek</i>	
Application of Distance Measuring with Matlab/Simulink	113
<i>Mircea Coman, Sergiu-Dan Stan, Milos Manic, Radu Balan</i>	
A Rough Sets Approach for Diagnostic M-Mode Evaluation in Newborn with Congenital Heart Diseases	119
<i>Ersin Kaya, Bülent Oran, Ahmet Arslan</i>	
Reinforcement Learning Accelerated with Artificial Neural Network for Maze and Search Problems	124
<i>Mehmet Hacibeyoglu, Ahmet Arslan</i>	
Semantic Analysis of Skin Lesions Using Radial Basis Function Neural Networks	128
<i>Karol Przystakski, Leszek Nowak, Maciej Ogorzałek, Grzegorz Surówka</i>	
Model-Based Fuzzy Control Solutions for a Laboratory Antilock Braking System	133
<i>Radu-Emil Precup, Sergiu Viorel Spătaru, Mircea-Bogdan Rădac, Emil M. Petriu, Stefan Preitl, Claudia-Adina Dragoş</i>	
How to Secure a High Quality of an Expert Fuzzy Model	139
<i>Izabela Rejer</i>	
3D Visualization for System and Networks Monitoring Support	145
<i>Angel Gómez, Carlos Dafonte, Bernardino Arcay</i>	
The Analysis of Dimensionality Reduction Techniques in Cryptographic Object Code Classification	157
<i>Jason L. Wright, Milos Manic</i>	
STRICR-FB, a Novel Size-Translation-Rotation-Invariant Character Recognition Method	163
<i>Dann Barnes, Milos Manic</i>	
Study on Quality of Complex Models of Dynamic Complex Systems	169
<i>Grzegorz Dralus</i>	

Fast and Efficient and Training of Neural Networks	175
<i>Hao Yu, Bogdan Wilamowski</i>	
Computer Networks as Human System Interface	182
<i>Nam Pham, Bogdan Wilamowski, A. Malimowski</i>	
Replacing Fuzzy Systems with Neural Networks	189
<i>Tiantian Xie, Hao Yu, Bogdan Wilamowski</i>	
A Vision-Based System for Elderly Patients Monitoring	195
<i>Francesco Cardile, Giancarlo Iannizzotto, Francesco La Rosa</i>	
An Ontology Building System for Structuring Medical Diagnostic Knowledge	203
<i>Marek Jaszuk, Grazyna Szostek, Andrzej Walczak</i>	
Reliability Analysis Methods for Healthcare System	211
<i>Elena Zaitseva</i>	
Provision of Thai Herbal Recommendation Based on an Ontology	217
<i>Takumi Kato, Noppadol Maneerat, Ruttikorn Varakulsiripunth, Satoru Izumi, Hideyuki Takahashi, Takuo Suganuma, Kaoru Takahashi, Yasushi Kato, Norio Shiratori</i>	
Analyzing Text Comprehension Deficits in Autism with Eye Tracking: A Case Study	230
<i>Alessandra Balestra, Marianna Boso, Stefania Orio, Roberto Pazzaglia, Alice Ravarelli, Maria Assunta Zanetti</i>	
Touchscreen-Based Input Technique for People with Intention Tremor	236
<i>Alexander Mertens, David Koch-Körfges, Nicole Jochems, Christopher M. Schlick</i>	
The Analysis of Patients' Airflow with Respect to Early Detection of Sleep Apnea	241
<i>Marcin Ciolek, Stefan Sieklicki, Jacek Drozdowski</i>	
A New Machine Learning Tool for Mining Brain Stroke Data	246
<i>Teresa Mroczek, Jerzy W. Grzymala-Busse, Zdzislaw S. Hippe</i>	
Melanocytic Skin Lesion Image Classification. Part I: Recognition of Skin Lesion	251
<i>Pawel Cudek, Jerzy W. Grzymala-Busse, Zdzislaw S. Hippe</i>	
Interactive Analytical Tool for Usability Analysis of Mobile Indoor Navigation Application	259
<i>Ivo Maly, Zdenek Mikovec, Jan Vystrcil</i>	
Towards Inclusive Design in Mobile Biometry	267
<i>Rita Wong, Norman Poh, Josef Kittler, David Frohlich</i>	
System of Communication and Control Based on the Thought	275
<i>Avid Roman Gonzalez</i>	
Support for Seamless Linkage between Less Detailed and More Detailed Representations for Comic Design	281
<i>Junko Ichino, Tomohiro Makita, Shun'Ichi Tano, Tomonori Hashiyama</i>	
Eye-Based User Interfaces: Some Recent Projects	289
<i>Marco Porta, Alice Ravarelli</i>	
The Effect of Using Visual Information Aids on Learning Performance During Larger Scale Procedural Task	295
<i>Ding-Hau Huang, Wen-Ko Chiou</i>	
Angle Perception on Autostereoscopic Displays	300
<i>Ersin Karaman, Yasemin Çetin, Yasemin Yardimci</i>	
Landmark Effect in Digital Human Model Simulation Task by Using the Biomorphic Tool	308
<i>Wen-Ko Chiou, Ming-Hsu Wang, Chien-Yu Peng</i>	
Image-Based Finger Pose Measurement for Hand User Interface	318
<i>Akinori Sasaki, Hiroshi Hashimoto, Sho Yokota, Yasuhiro Ohyama</i>	
Bone Cutting Trajectory Generation Using a Medical User Interface of an Orthopedical Surgical Robotic System	325
<i>Yasin Guven, Duygun Erol Barkana</i>	
Implementation of the View-Dependent Progressive Meshes for Virtual Museum	331
<i>Marek Francki, Krzysztof Skabek, Ryszard Winiarczyk</i>	
A Method for Goal Understanding and Self-Generating Will for Humanoid Robots	344
<i>Peter Nauth</i>	
Human System Interface for Manufacturing Control - Industrial Implementation	350
<i>Tomasz Zabinski, Tomasz Maczka</i>	
Self-Body Discovery Based on Visuomotor Coherence	356
<i>Ryo Saegusa, Giorgio Metta, Giulio Sandini</i>	
Mobile Wireless Measurement System for Potatoes Storage Management	363
<i>Wiktor Sieklicki, Marek Kosciuk, Stefan Sieklicki</i>	
Human Action Recognition Using 4W1H and Particle Swarm Optimization Clustering	369
<i>Leon Palafox, Hideki Hashimoto</i>	
A Four Legged Walking Robot with Obstacle Overcoming Capabilities	374
<i>Antonio Bento Filho, Paulo Faria S. Amaral, Benedito G. Miglio Pinto</i>	

Towards the Development of a Haptics Guideline in Human-Robot Systems	380
<i>Bojan Andonovski, Pere Ponsa, Alicia Casals</i>	
Evaluation of Grasping-Easiness from Perspective of Dynamics with Hand Model	388
<i>Hiroshi Hashimoto, Akinori Sasaki, Sho Yokota, Yasuhiro Ohyama, Chiharu Ishii</i>	
Making Time-of-Flight Range Imaging Cameras Applicable for Human-Machine-Interaction by Depth Correction	393
<i>Jochen Radmer, Jörg Krüger</i>	
Digital Images Interpolation with Wavelet Edge Extractors	399
<i>Krzysztof Adamczyk, Andrzej Walczak</i>	
Car Finding with a Pedestrian Navigation System	406
<i>Mircea Popa, Veronica Argesanu, Anca Sorana Popa</i>	
Methods for Reduction of Operational Force in Force Sensor-less Bilateral Control with Thrust Wire	412
<i>Tomoya Sato, Sho Sakaino, Kouhei Ohnishi</i>	
Method of Improving the Man Machine Communication in Real-Time Distributed Systems	419
<i>Mirosław Hajder, Tomasz Bartczak</i>	
EEG Training Platform: Improving Brain-Computer Interaction and Cognitive Skills	425
<i>João P. Rodrigues, Daria G. Migotina, Agostinho C. Da Rosa</i>	
ambiStar: A Virtual Space Representation Using 3D Human Interaction	430
<i>Nikolas Grigoriou, Andreas Floros</i>	
Problem of Network Security Threats	436
<i>Teresa Mendyk-Krajewska, Zygmunt Mazur</i>	
Optimal Bayesian Network Design for Efficient Intrusion Detection	444
<i>Igor Ruiz-Agundez, Yoseba K. Penya, Pablo Garcia Bringas</i>	
A Novel Biometric Recognition System Based on Ground Reaction Force Measurements of Continuous Gait	452
<i>Zhi-Ming Yao, Xu Zhou, Er-Dong Lin, Su Xu, Yi-Ning Sun</i>	
A Psychological Approach to Information Technology Security	459
<i>Ivan Enrici, Mario Ancilli, Antonio Lioy</i>	
The Study of Traffic Anomalies Using Self-Similar Traffic Model	467
<i>Janusz Kolbusz, Janusz Korniak, Stanislaw Paszczynski</i>	
Providing Privacy Preserving in Cloud Computing	472
<i>Jian Wang, Yan Zhao, Shuo Jiang, Jiajin Le</i>	
Visualizing Creative Destruction in Entrepreneurship Education	477
<i>Leonidas Deligiannidis, Erik Noyes</i>	
Computer Vision and Graphics Based System for Interaction with Mentally and Physically Disabled Children	485
<i>Joanna Marnik, Sławomir Samolej, Tomasz Kapuscinski, Mariusz Oszust, Marian Wysocki, Piotr Szczerba, Przemyslaw Orgorzalek</i>	
Extension of the MOODLE e-Learning Platform with Database Management Mechanisms	491
<i>Katarzyna Harezlak, Aleksandra Werner</i>	
Magnetic Levitation System Laboratory-Based Education in Control Engineering	496
<i>Claudia-Adina Dragos, Stefan Preitl, Radu-Emil Precup, Emil M. Petriu</i>	
Enchanting E-Learning Through the Use of Interactive-Feedback Loop in Digital Games	502
<i>Cagin Kazimoglu, Mary Kiernan, Liz Bacon</i>	
Introduce to E – engineering	510
<i>Kamil Krzeminski, Ireneusz Józwiak</i>	
Are We Ready for a CME eLearning Readiness Index (eCMERI)? A Map and a Literature Review	513
<i>Lara Bachmann, Lorenzo Cantoni, Joseph Coyne, Luca Mazzola, Eric McLaughlin</i>	
The Comparative Analysis of Remote Teaching Applied in Higher Education	520
<i>Lucyna Pyzik</i>	
A Combined Semantic-Syntactic Sentence Analysis for Students Assessment	527
<i>Vincenzo Cannella, Roberto Pirrone</i>	
Set Pair Mathematical Model of Teaching Quality Evaluation System and its Application	531
<i>Zhang Chunying, Liu Fengchun, Wang Jing</i>	
Processing the Results of Questionnaire-Based Usability Evaluation of SOA/SOKU System	536
<i>Jaroslav Drapala, Janusz Sobecki, Dimitrij Zatuchin</i>	
Semantic Sense Extraction From Wikipedia Pages	543
<i>Roberto Pirrone, Arianna Pipitone, Giuseppe Russo</i>	
The Role of Tags for Recommendation: A Survey	548
<i>Antonina Dattolo, Felice Ferrara, Carlo Tasso</i>	
A Popularity-Based URL Ordering Algorithm for Crawlers	556
<i>Aravind Chandramouli, Susan Gauch, Joshua Eno</i>	

Crowdsourcing Semantic Content: A Model and Two Applications	563
<i>Angelo Di Iorio, Alberto Musetti, Silvio Peroni, Fabio Vitali</i>	
Using CiteSeer to Analyze Trends in the ACM's Computing Classification System	571
<i>Mirco Speretta, Susan Gauch, Praveen Lakkaraju</i>	
GVIS: A Framework for Graphical Mashups of Heterogeneous Sources to Support Data Interpretation	578
<i>Luca Mazzola, Davide Eynard, Riccardo Mazza</i>	
MIRTES: Middleware for Real-Time Transactions in Embedded Systems	586
<i>Daniele Alessandrelli, Paolo Pagano, Christian Nastasi, Matteo Petracca, Aldo Franco Dragoni</i>	
Wireless Sensor Networks in Life Science Applications	594
<i>Philipp Gorski, Frank Golatowski, Ralf Behnke, Christian Fabian, Kerstin Thurow, Dirk Timmermann</i>	
MEMS Based Gesture Recognition	599
<i>O. Mirabella, M. Brischetto, G. Mastroeni</i>	
Ambient Intelligence Assistant for Running Sports Based on k-NN Classifiers	605
<i>P. López-Matencio, J. Vales Alonso, F. J. González-Castaño, J. L. Sieiro, J. J. Alcaraz</i>	
A Wireless Sensor Network for Distributed Autonomous Traffic Monitoring	612
<i>Giancarlo Iannizzotto, Francesco La Rosa, Lucia Lo Bello</i>	
Personal Assistance Support Framework for Sensor Networks	620
<i>Claas Richter, Yuzuru Tanaka</i>	
Authentication for Elders and Disabled Using Eye Tracking	629
<i>Tomasz Kocejko, Jerzy Wtorek, Adam Bujnowski, Jacek Ruminski, Mariusz Kaczmarek, Artur Polinski</i>	
Color Transformation Methods for Dichromats	634
<i>Jacek Ruminski, Jerzy Wtorek, Joanna Ruminska, Mariusz Kaczmarek, Adam Bujnowski, Tomasz Kocejko, Artur Polinski</i>	
Complementary Application of House-Embedded and Wearable Infrastructures for Health Monitoring	642
<i>Piotr Augustyniak</i>	
Estimation of Activity Parameters by Means of Domestic Media Consumption Analysis	648
<i>Adam Bujnowski, Jerzy Wtorek, Mariusz Kaczmarek, Tomasz Kocejko, Jacek Ruminski</i>	
A Vision-Based Technique for Assisting Visually Impaired People and Autonomous Agents	653
<i>Andrzej Sluzek, Mariusz Paradowski</i>	
Simultaneous Monitoring of Heart Performance and Respiration Activity	661
<i>Jerzy Wtorek, Adam Bujnowski, Magdalena Lewandowska, Jacek Ruminski, Mariusz Kaczmarek</i>	
ICT Integration for Info-Marginalized People through Innovative Digital TV Interfaces	666
<i>Alessandro Andreadis, David Baldo, Giuliano Benelli, Riccardo Zambon</i>	
The System of a Touchfree Personal Computer Navigation by Using the Information on the Human Eye Movements	674
<i>Tomasz Lewandowski, Piotr Augustyniak</i>	
An Experimental Platform for Assessing SCADA Vulnerabilities and Countermeasures in Power Plants	679
<i>Igor Nai Fovino, Marcelo Masera, Luca Guidi, Giorgio Carpi</i>	
Evaluating Impact of Security on OPC UA Performance	687
<i>Salvatore Cavalieri, Giovanni Cutuli, Salvatore Monteleone</i>	
SCADA Design in Automation Systems	695
<i>Pere Ponsa, Ramon Vilanova, Alex Pérez, Bojan Andonovski</i>	
Adaptation of the Display Dynamics for Monitoring of Controlled Dynamical Processes	701
<i>Jacek Pieniazek</i>	
Bionically Inspired Information Representation Module	708
<i>Heimo Zeilinger, Andreas Perner, Stefan Kohlhauser</i>	
Integrating Internal Performance Measures into the Decision Making Process of Autonomous Agents	715
<i>Roland Lang, Stefan Kohlhauser, Gerhard Zucker, Tobias Deutsch</i>	
Limitations, Possibilities and Implications of Brain-Computer Interfaces	722
<i>Dietmar Dietrich, Roland Lang, Dietmar Bruckner, Georg Fodor, Brit Müller</i>	
A Taking Robot for the Vocal Communication by the Mimicry of Human Voice	728
<i>Mitsuki Kitani, Tatsuya Hara, Hiroki Hanada, Hideyuki Sawada</i>	
Classification of Body Motion for Human Body Motion Interface	734
<i>Sho Yokota, Hiroshi Hashimoto, Yasuhiro Ohyama, Jin-Hua She, Daisuke Chugo, Hisato Kobayashi</i>	
Detection of Buildings in Observing Images Using Map Information	739
<i>Seiji Hata, Daisuke Nakatani, Junichiro Hayashi</i>	
Prediction with Temporal Rough Set Flow Graphs: The Eigen Fuzzy Sets Perspective	744
<i>Krzysztof Pancierz, Zofia Matusiewicz</i>	

A Hand-Based Visual Intent Recognition Algorithm for Wheelchair Motion	749
<i>Thierry Luhandjula, Karim Djouani, Yskandar Hamam, Ben Van Wyk, Quentin Williams</i>	
Prometheus – Fuzzy Information Retrieval for Semantic Homes and Environments	757
<i>Edy Portmann, Aliaksei Andreshevich, Rolf Kistler, Alexander Klapproth</i>	
A Preliminary Attempt to Rules Generation for Mental Disorders	763
<i>Jerzy Gomula, Wiesław Paja, Krzysztof Pancierz, Jarosław Szkola</i>	
A New Decision Rule Optimization Methods in Analyzing of Medical Datasets	766
<i>Wiesław Paja, Tomasz Pardela, Mariusz Wrzesien</i>	
The Recruitment and Selection of Staff Problem with an Ant Colony System	770
<i>Arkadiusz Lewicki, Ryszard Tadeusiewicz</i>	
Remarks on Two Valued Information Systems	775
<i>Barbara Fryc, Zofia Machnicka, Marek Palasinski</i>	
Embedded Low-Level Video Processing for Surveillance Purposes	779
<i>Ginés Benet, José E. Simó, Gabriela Andreu-García, Juan Rosell, Jordi Sánchez</i>	
Safety Conditions Verification of Communication in Distributed Control System	787
<i>Waldemar Mikluszka</i>	
Author Index	