## 5th International Conference on Pervasive Computing and Applications

(ICPCA 2010)

Maribor, Slovenia
1 – 3 December 2010



**IEEE Catalog Number: ISBN:** 

CFP1059A-PRT 978-1-4244-9144-5

## **CONTENTS**

1.	Keynote	papers	
		P	

Ergonomic Trust Management in Pervasive Computing Environments – Qualitative Assessment Dynamics  Denis Tr&k	7
2. Health-care and Assisted Living	
Stress and Sleep Quality Estimation from a Smart Wearable Sensor	14
Dennis Majoe , Philipp Bonhof and Thomas Kaegi-Trachsel	
An Asynchronous Dynamic Bayesian Network for Activity Recognition in an	20
Ambient Intelligent Environment	
Nasim Mirarmandehiand Hamid R.Rabiee	
Advanced Measure Selection in Automatic NREM Discrimination Based on	26
EEG	
Bin Hu, Jingzhi Yan, Li Liu and Wen Zhao	
A Solution on Ubiquitous EEG-Based Biofeedback Music Therapy	32
Bin Hu, Qunxi Dong and Yongchang Li	
From Cloud Computing to Mobile Internet, From User Focus to Culture and	38
Hedonism - The Crucible of Mobile Health Care and Wellness Applications	
Firat Alagöz, André Calero Valdez, Wiktoria Wilkowska, Martina Ziefle, Stefan Dorner	
and Andreas Holzinger	
Long-term Rain Attenuation Prediction for Ka-Band link over Venezuela	46
Felice Candilio, Qiang Gao and R Ricardo	
INFORMATION TECHNOLOGY AND HEALTH CARE: A SCINARIO OF	50
BIOFEEDBACK	
Yunshan Cao, Hong Peng, Quanying Liu, Wenyu Cao and Nan Wang	
PsyCare: A Novel Framework for Online Psychological Counseling	56
Baohui Sun, Wei Kang, Ruiquan Zhang, Zhiqi Fang, Xinguo Xu, Yue Ning, Ang Li and	
Tingshao Zhu	

## 3. Networked Societies

Designs of Privacy Protection in Location-Aware Mobile Social Networking Applications	62
Rong Tan, Junzhong Gu, Jing Yang and Peng Chen	
A Context-aware Framework Supporting Complex Ubiquitous Scenarios with Augmented Reality Enabled	69
Jinxue Zhang, Yuhong Sheng, Wei Hao, Phil Tian, Kai Miao, Patricia P.Wang and Cynthia K.Pickering	
	75
FOAF Introductions: Automatically Growing, and Improving the Accuracy of Detected Social Graphs	73
Jamie Banford, Alisdair McDiarmid and James Irvine	
Accurate Braille-Chinese Translation towards Efficient Chinese Input method	82
for Blind People	
Chao Wang, Xiangdong Wang, Yueliang Qian and Shouxun Lin	0.0
An Approach based on Extracted Data for Wrapper Maintenance Wei Luo, QingZhong Li and Yanhui Ding Li	88
DIRS: Distributed Image Retrieval System Based on MapReduce	93
Jing Zhang, Xianglong Liu, Junwu Luo and Bo Lang	,,,
Sentiment Classification for Stock News	99
Yang Gao, Li Zhou, Yong Zhang, Chunxiao Xing, Yigang Sun and Xianzhong Zhu	
On-line Event Detection from Web News Stream	105
Yan Fu, Ming-quan Zhou, Xue-song Wang and Hua Luan	
Affective-Word based Chinese Text Sentiment Classification	111
Yue Ning, Tingshao Zhu, Yan Wang and Xinguo Xu	
Hot Keyword Identification for Extracting Web Public Opinion	118
Zhiqi Fang, Yue Ning and Tingshao Zhu	
GLOSS: A Social Networks-Based Recommender System	122
Ruiquan Zhang, Baohui Sun, Wei Kang and Tingshao Zhu	
4. Technology Infrastructure	
Cross-layer Power Allocation Scheme for Cellular Network Using Cooperative Diversity	128
Qiu Lin and Song Meina	
A Deniable Group Key Exchange Protocol for Imbalanced Wireless Networks	133
Shumin Chen, Qingfeng Cheng and Chuangui Ma	
An Efficient Geographic Surface Routing Algorithm in 3D Ad Hoc Networks Han Su, Yun Wang and Dingyi Fang	138
Context-Aware Real-Time Systems With Autonomic Controllers	145
Mariusz Pelc, Richard Anthony and Witold Byrski	0
Context-Aware Autonomic Systems in Real-Time Applications : Performance	153
Evaluation	

Mariusz Pelc, Richard Anthony and Aleksandra Kawala-Janik	
An Energy Efficient Multimodal Wireless Video Sensor Network with eZ430-RF2500 modules	161
Vana Jelicic, Michele Magno, Davide Brunelli, Vedran Bilas and Luca Benini	
Application of Radio Frequency Positioning Technology in TDOA System	167
Based on Improved Genetic Algorithm	
Qiaohong Zu and Ting Wu	
Multi-gateway Nodes Data Collected Routing Algorithm Based on Load	172
Balancing Tree	
Qianping Wang, Qin Xu and Ke Wang	
A Robust and Secure Overlay Storage Scheme Based on Erasure Coding	177
Chuanyou Li and Yun Wang	
Research on Proactive Performance Monitoring Mechanism for Mobile	183
Network	
Yanhua Yu, Meina Song, Junde Song and Zhijun Ren	
Research on telecom service deployment in cloud environments	189
Huiyang Xu, Meina Song, Jin Peng and Qing Yu	
Despeckling Synthetic Aperture Radar Images with Cloud Computing using	195
Graphics Processing Units	
Matej Kseneman, Dušan Gleich and Amor Chowdhury	
Functionality and structure of a complex system with nearly autonomic	201
devices	
Janja Svecko, Sasa Klampfer and Amor Chowdhury	
Network-level Synchronization in Decentralized Social Ad-HocNetworks	206
Matthew Dobson, Spyros Voulgaris and Maarten van Steen	
A Dynamic Group-based Load Balancing Approach in A DHT-P2P System	213
Yuemei Lv and Junde Song	
Economic Model Computing for FTTH Access Network	218
Zijad Havic	
Design optimization by discrete flow computing and Morse technique	223
Xiyu Liu, Wenxing Sun and Jianping Zhang	
A Research of Object Mapping Algorithm Based on Cloud Storage	228
Yong Gan, Shanshan Han, Guodong Chen and Zhen He	
Application Deployment on the SaaS Platform	232
Hong He	
Heterogeneous Context-aware Routing Protocol for Opportunistic Network	238
Xingguang Xie and Yong Zhang	
Flexible, Plug-and-Play network middleware against network instability with	244
R2-OSGi	
Jinzhao Liu, Yongqiang Lv, Lei Zhang, Qiang Fu, Dan Wang and Yu Chen	
Lazy Update Propagation for Data Replication in Cloud Computing	250
Luhong Diao and Aiqiang Gao	
Customization Modeling based on Metagraph for Multi-Tenant Applications	255
CUI Lizhen, WANG Haiyang, Jinjiao LIN and Haitao PU	

Cost-effective Placement of Mesh Nodes in Wireless Mesh Networks	261
Wenjia Wu, Junzhou Luo and Ming Yang iWebImage: Enabling Real-Time Interactive Access to Web Images Wenchang Xu, Yuanchun Shi and Xin Yang	267
Structural Analysis for Diagnosis of a Two-tank System  Xiaohe Zhang	273
Research on Context-aware Scheduling Algorithms in pervasive computing environments  Zhande lv, Xiufen Fu and Weiqiang Huang	277
The Design of a Pervasive Environment for Machining  Yan Li	283
Soft Body Cutting Simulation Based on a New Tetrahedralization Method Zhonghua Lu and Dingfang Chen	287
Research of the Multi-uplink High-performance Web Caching Proxy Lin Li, Wenbo Chen, Jun Tang, Shanxi Li	294
Search-based Short-Text Classification  Kang Wei, Ruiquan Zhang, Xinguo Xu	297
5. Collaborative Work and Collaborative Business	
Decision Francisco Process Constant in Maria	
Design on an Enterprises Process Cooperative Model	302
Zhilin Zhang, Wenan Tan and Chuanqun Jiang	302
Zhilin Zhang, Wenan Tan and Chuanqun Jiang User-independent activity recognition for industrial assembly lines-feature vs. instance selection	302 307
Zhilin Zhang, Wenan Tan and Chuanqun Jiang User-independent activity recognition for industrial assembly lines-feature vs. instance selection Ville Huikari, Heli Koskimäki, Pekka Siirtola and Juha Röning	307
Zhilin Zhang, Wenan Tan and Chuanqun Jiang User-independent activity recognition for industrial assembly lines-feature vs. instance selection Ville Huikari, Heli Koskimäki, Pekka Siirtola and Juha Röning A Feedback Adaptive Fuzzy Petri Net Model for Context Reasoning Saiping Wen, Jian Ye and Zhenmin Zhu	307 313
Zhilin Zhang, Wenan Tan and Chuanqun Jiang User-independent activity recognition for industrial assembly lines-feature vs. instance selection Ville Huikari, Heli Koskimäki, Pekka Siirtola and Juha Röning A Feedback Adaptive Fuzzy Petri Net Model for Context Reasoning	307
Zhilin Zhang, Wenan Tan and Chuanqun Jiang User-independent activity recognition for industrial assembly lines-feature vs. instance selection Ville Huikari, Heli Koskimäki, Pekka Siirtola and Juha Röning A Feedback Adaptive Fuzzy Petri Net Model for Context Reasoning Saiping Wen, Jian Ye and Zhenmin Zhu Research and Application of Web Mining Based on Web Service Xiongwei Huang, Dingfang Chen and Qiaohong Zu The application study in business process management based on intelligent objects technology	307 313
Zhilin Zhang, Wenan Tan and Chuanqun Jiang User-independent activity recognition for industrial assembly lines-feature vs. instance selection Ville Huikari, Heli Koskimäki, Pekka Siirtola and Juha Röning A Feedback Adaptive Fuzzy Petri Net Model for Context Reasoning Saiping Wen, Jian Ye and Zhenmin Zhu Research and Application of Web Mining Based on Web Service Xiongwei Huang, Dingfang Chen and Qiaohong Zu The application study in business process management based on intelligent objects technology Qiaohong Zu and Hui Wang	<ul><li>307</li><li>313</li><li>320</li><li>324</li></ul>
Zhilin Zhang, Wenan Tan and Chuanqun Jiang User-independent activity recognition for industrial assembly lines-feature vs. instance selection Ville Huikari, Heli Koskimäki, Pekka Siirtola and Juha Röning A Feedback Adaptive Fuzzy Petri Net Model for Context Reasoning Saiping Wen, Jian Ye and Zhenmin Zhu Research and Application of Web Mining Based on Web Service Xiongwei Huang, Dingfang Chen and Qiaohong Zu The application study in business process management based on intelligent objects technology Qiaohong Zu and Hui Wang Automatic Context Data Life Cycle Management Framework	307 313 320
Zhilin Zhang, Wenan Tan and Chuanqun Jiang User-independent activity recognition for industrial assembly lines-feature vs. instance selection Ville Huikari, Heli Koskimäki, Pekka Siirtola and Juha Röning A Feedback Adaptive Fuzzy Petri Net Model for Context Reasoning Saiping Wen, Jian Ye and Zhenmin Zhu Research and Application of Web Mining Based on Web Service Xiongwei Huang, Dingfang Chen and Qiaohong Zu The application study in business process management based on intelligent objects technology Qiaohong Zu and Hui Wang Automatic Context Data Life Cycle Management Framework David Martín, Carlos Lamsfus and Aurkene Alzua	<ul><li>307</li><li>313</li><li>320</li><li>324</li><li>330</li></ul>
Zhilin Zhang, Wenan Tan and Chuanqun Jiang User-independent activity recognition for industrial assembly lines-feature vs. instance selection Ville Huikari, Heli Koskimäki, Pekka Siirtola and Juha Röning A Feedback Adaptive Fuzzy Petri Net Model for Context Reasoning Saiping Wen, Jian Ye and Zhenmin Zhu Research and Application of Web Mining Based on Web Service Xiongwei Huang, Dingfang Chen and Qiaohong Zu The application study in business process management based on intelligent objects technology Qiaohong Zu and Hui Wang Automatic Context Data Life Cycle Management Framework David Martín, Carlos Lamsfus and Aurkene Alzua Building a Context World for Dynamic Service Composition	<ul><li>307</li><li>313</li><li>320</li><li>324</li></ul>
Zhilin Zhang, Wenan Tan and Chuanqun Jiang User-independent activity recognition for industrial assembly lines-feature vs. instance selection Ville Huikari, Heli Koskimäki, Pekka Siirtola and Juha Röning A Feedback Adaptive Fuzzy Petri Net Model for Context Reasoning Saiping Wen, Jian Ye and Zhenmin Zhu Research and Application of Web Mining Based on Web Service Xiongwei Huang, Dingfang Chen and Qiaohong Zu The application study in business process management based on intelligent objects technology Qiaohong Zu and Hui Wang Automatic Context Data Life Cycle Management Framework David Martín, Carlos Lamsfus and Aurkene Alzua Building a Context World for Dynamic Service Composition Lian Yu, Shuang Su, Yang Zhang and Arne Glenstrup	<ul><li>307</li><li>313</li><li>320</li><li>324</li><li>330</li><li>336</li></ul>
Zhilin Zhang, Wenan Tan and Chuanqun Jiang  User-independent activity recognition for industrial assembly lines-feature vs. instance selection  Ville Huikari, Heli Koskimäki, Pekka Siirtola and Juha Röning  A Feedback Adaptive Fuzzy Petri Net Model for Context Reasoning  Saiping Wen, Jian Ye and Zhenmin Zhu  Research and Application of Web Mining Based on Web Service  Xiongwei Huang, Dingfang Chen and Qiaohong Zu  The application study in business process management based on intelligent objects technology  Qiaohong Zu and Hui Wang  Automatic Context Data Life Cycle Management Framework  David Martín, Carlos Lamsfus and Aurkene Alzua  Building a Context World for Dynamic Service Composition  Lian Yu, Shuang Su, Yang Zhang and Arne Glenstrup  Goal-Driven Context-aware Service Composition	<ul><li>307</li><li>313</li><li>320</li><li>324</li><li>330</li></ul>
Zhilin Zhang, Wenan Tan and Chuanqun Jiang User-independent activity recognition for industrial assembly lines-feature vs. instance selection Ville Huikari, Heli Koskimäki, Pekka Siirtola and Juha Röning A Feedback Adaptive Fuzzy Petri Net Model for Context Reasoning Saiping Wen, Jian Ye and Zhenmin Zhu Research and Application of Web Mining Based on Web Service Xiongwei Huang, Dingfang Chen and Qiaohong Zu The application study in business process management based on intelligent objects technology Qiaohong Zu and Hui Wang Automatic Context Data Life Cycle Management Framework David Martín, Carlos Lamsfus and Aurkene Alzua Building a Context World for Dynamic Service Composition Lian Yu, Shuang Su, Yang Zhang and Arne Glenstrup	<ul><li>307</li><li>313</li><li>320</li><li>324</li><li>330</li><li>336</li></ul>

Chain VMI's Customer Demanding	
Jiawei Yang, Bin Xie and Qiangyi Sha	
A SEDA-based Framework for building Big Web Service	354
Lianru Liu, Meina Song, Xiaoxiang Luo, Xinhua E and Lin Qiu	
Building IT-based Incident Management Platform	359
Qian Wang, Lianru Liu, Xiaoxiang Luo, Xinhua E and Junde Song	
Research of Cross-organizational Services Composition Consistency using	365
CSP Trace Semantic1	
Xiaolan Wang and Zhentao Su	
The Digitalized Campus Based on Web Services and BPEL	370
Ying Xin and Shengzhong Yuan	
Algorithm Optimization of Checking Atomicity-equivalent Public View	374
Rui Guo and Hong He	
An Improved Approach to Rapid Discovery of Semantic Web Service	378
Zhentao Su and Xiaolan Wang	
Intelligent Business Assistant Based on Context-aware Computing Platform	382
Yanshuai Zhang and Hong He	
Optimal Utility-based QoS aware Resource Allocation for Cooperative	388
Networks	
Qiu Lin, Song Junde and E Xinhua	
A Service Model Based on Recommendation Trust in Pervasive Computing	393
Environment	
Zongpu Jia, Qianqian Feng and Jinxia Yu	
OO Petri Net Based Business Rule Modeling of Intelligent Taxation System in	398
Pervasive Environment	
Lizhen Cui, Jinjiao LIN and Haitao PU	
An Intelligent Interaction System Architecture of the Internet of Things Based	402
on Context	
Haitao Pu,Jinjiao Lin,Lizhen Cui	
Hook-based Configurable Security for Pervasive Database	406
Xinguo Xu, Jianfeng Qiao and Jiqin Du	
Novel Expressive Speech Classification Algorithm based on Multi-Level	410
Extraction Techniques	
Aleš Zelenik, Bojan Kotnik, Zdravko Kačič and Amor Chowdhury	

'"Cwj qt'**K**pf gz