

2012 IIAI International Conference on Advanced Applied Informatics

(IIAIAAI 2012)

**Fukuoka, Japan
20-22 September 2012**



IEEE Catalog Number: CFP1262T-PRT
ISBN: 978-1-4673-2719-0

2012 IIAI International Conference on Advanced Applied Informatics

IIAI-AAI 2012

Table of Contents

Message from the Conference General Chair.....	xi
A Message from the Program Chairs.....	xii
Organizing Committees.....	xiii

Keynote Addresses

Towards a Social Memory: Human Experience Mining and Semantic Social Networks	1
<i>Sung-Hyon Myaeng</i>	
Internal Quality Assurance and Improvement of University Utilizing Institutional Research	2
<i>Masashi Sekiguchi</i>	
Conceptions of Learning in Technology-Enhanced Learning Environments	3
<i>Chin-Chung Tsai</i>	

Technical Papers

A Linked Data Model for E-books	4
<i>Kornschnok Dittawit and Vilas Wuwongse</i>	
Development of a Website to Collect and Provide Questions about Book Titles Posted in Blogs and on Twitter	9
<i>Shunsuke Arai and Keita Tsuji</i>	
Formalization of the Paper Registration Process to Institutional Repositories	14
<i>Koji Sakaguchi, Satoshi Nakayama, and Kensuke Baba</i>	
Information Behavior of Thai Adolescents in the Electronic Age	19
<i>Jutharat Changthong, Lampang Manmart, and Chollabhas Vongprasert</i>	
Investigation of Interest Range and Earnestness of Library Patrons from Circulation Records	25
<i>Toshiro Minami and Kensuke Baba</i>	
Use of Library Loan Records for Book Recommendation	30
<i>Keita Tsuji, Erika Kuroo, Sho Sato, Ui Ikeuchi, Atsushi Ikeuchi, Fuyuki Yoshikane, and Hiroshi Itsumura</i>	

Analysis of Multiplexed Parse Trees for Almost Instantaneous VF Codes	36
<i>Satoshi Yoshida and Takuya Kida</i>	
Automatic Information Extraction of Experiments from Nanodevices Development Papers	42
<i>Thaer M. Dieb, Masaharu Yoshioka, and Shinjiro Hara</i>	
Finding What Changes for Two Graphs Constructed from Different Time Intervals	48
<i>Aixiang Li, Makoto Haraguchi, Yoshiaki Okubo, and Etsuji Tomita</i>	
Frequent Approximate Substring Pattern Mining Using Locally Optimal Occurrence Counting	54
<i>Atsuyoshi Nakamura, Hisashi Tosaka, and Mineichi Kudo</i>	
Pattern Mining from Trajectory GPS Data	60
<i>Xiaoliang Gen, Hiroki Arimura, and Takeaki Uno</i>	
Trajectory Pattern Matching Based on Bit-Parallelism for Large GPS Data	66
<i>Hirohito Sasakawa and Hiroki Arimura</i>	
Designing a Streamlined Viewport Strategy System to Enhance Performance in Context Awareness in Mobile Learning Environments	72
<i>Jia Zhang, Huei-Tse Hou, and Kuo-En Chang</i>	
Mobile-based Blended Instruction in a Foreign Language Classroom as a Model of Enhancing Learners' Attitude	77
<i>Yuichi Ono, Manabu Ishihara, and Mistuo Yamashiro</i>	
Simulation Teaching in 3D Augmented Reality Environment	83
<i>Su Cai, Xu Wang, Mengnan Gao, and Shengquan Yu</i>	
Supporting Development of Motor-Skills in a Comfortable Environment	89
<i>Kenji Matsuura, Kazuhide Kanenishi, and Hiroki Moriguchi</i>	
Using the Multi-Mouse Quiz System for Quiz Making Activities in an Elementary School	93
<i>Juan Zhou, Mikihiro Mori, and Hajime Kita</i>	
Method to Search Accommodations System by Focusing on User Interest	97
<i>Ryotaro Kawaishi, Fumito Masui, Yasunori Maeda, Fumitaro Goto, and Hiroshi Masui</i>	
An Active Learning Based Support Tool for Extracting Hints of Tourism Development from Blog Articles	103
<i>Masato Tokuhisa, Hiroshi Shahana, Masaki Murata, and Jin'ichi Murakami</i>	
Construction of a System for Providing Travel Information along Hiroden Streetcar Lines	108
<i>Aya Ishino, Hidetsugu Nanba, and Toshiyuki Takezawa</i>	
Extraction of Tourist Behavior Contexts from Blog by Verbs and Their Objects	112
<i>Tetsuya Nakatoh and Sachio Hirokawa</i>	
On-site Likelihood Identification of Tweets for Tourism Information Analysis	117
<i>Kazutaka Shimada, Shunsuke Inoue, and Tsutomu Endo</i>	

A M2M System Using Arduino, Android and Wiki Software	123
<i>Takashi Yamanoue, Kentaro Oda, and Koichi Shimozono</i>	
Evaluation of a Fingerprint Identification Algorithm with SIFT Features	129
<i>Ali Ismail Awad and Kensuke Baba</i>	
Hiding of User Presence for Privacy Preserving Data Mining	133
<i>Takao Takenouchi, Takahiro Kawamura, and Akihiko Ohsuga</i>	
Improving Service Level Management Practices: A Case Study in an IT Service Provider Organization	139
<i>Marko Jäntti and Antti Suhonen</i>	
Near Friends Communication Encouragement System Using NFC and SNS	145
<i>Hiroaki Ninomiya, Eisuke Ito, Brendan Flanagan, and Sachio Hirokawa</i>	
A Customizable Language Learning Support System Using Course-centered Ontology and Teaching Method Ontology	149
<i>Jingyun Wang and Takahiko Mendori</i>	
Emotion Labyrinth: Learning to Rationalize Emotions through 3D Game Environment	153
<i>Yu-Jen Hsu, Ju-Ling Shih, and Chien-Huang Chen</i>	
Learning Log Navigator: Augmented Awareness Past Learning Experiences	159
<i>Kousuke Mouri, Hiroaki Ogata, Mengmeng Li, Bin Hou, and Noriko Uosaki</i>	
Mistake Discovery and Generation of Exercises Automaticity in Context	163
<i>Chengjiu Yin, Sachio Hirokawa, Brendan Flanagan, Takahiko Suzuki, and Yoshiyuki Tabata</i>	
A Study of Stress Diagnosis Support System by Finger Plethysmogram Measurement	168
<i>Tomohiro Takahashi, Satoshi Kaga, Akinori Minazuki, and Hidehiko Hayashi</i>	
Research of Intelligent Search Engine Using Web Camera	173
<i>Ma Wenpeng, Akinori Minazuki, and Hidehiko Hayashi</i>	
Research on the Decision-Making Process by Communication Specialist (CS) in the Navigation Management of Helicopter Emergency Medical Service (HEMS)	177
<i>Tatsuru Nagata, Konishi Misaki, Hidehiko Hayashi, and Akinori Minazuki</i>	
Study on 3D Image Assessment Using Motion Capture System	182
<i>Ma Huan, Akinori Minazuki, and Hidehiko Hayashi</i>	
A Research Design for Observing Organizational Transformations in Universities: With a Focus on Abolishment of Research Centers	187
<i>Kenta Kaneko</i>	
Connecting an Institutional Repository with a Researcher Database	190
<i>Masao Mori, Toshie Tanaka, and Kensuke Baba</i>	
Database as a Tool for Visualization of Institutional Information: A Case Study of KOBE University Information Database (KUID)	193
<i>Shigeru Asano and Itsuo Hatono</i>	
The Development of JCIRP: Self-reported Survey System to Assess Student Learning Outcomes	199
<i>Reiko Yamada</i>	

Balance: A Key Factor for the Evaluation of Semantic Web Application	203
<i>Haibo Yu, Tsunenori Mine, and Makoto Amamiya</i>	
Extraction of Relevant Snippets from Web Pages Using Hybrid Features	209
<i>Jun Zeng, Qingyu Xiong, Junhao Wen, and Sachio Hirokawa</i>	
Search Engine Focused on Multiple Features of Scientific Articles	214
<i>Toshihiko Sakai, Brendan Flanagan, Jun Zeng, Tetsuya Nakatoh, and Sachio Hirokawa</i>	
Translating XML Documents Through Dyck-Typed Regular Translation Elementary Formal Systems	218
<i>Noriko Sugimoto and Kouichi Hirata</i>	
A Real-Time Collaborative Web Page Editing System WFE-S Based on Cloud Computing Environment	224
<i>Tadachika Ozono, Robin M.E. Swezey, Shun Shiramatsu, Toramatsu Shintani, Ryota Inoue, Yudai Kato, and Takushi Goda</i>	
A SPARQL Query Rewriting Approach on Heterogeneous Ontologies with Mapping Reliability	230
<i>Takahisa Fujino and Naoki Fukuta</i>	
A Web Agent Based on Exploratory Event Mining in Social Media	236
<i>Norifumi Hirata, Hiroyuki Sano, Robin M.E. Swezey, Shun Shiramatsu, Tadachika Ozono, and Toramatsu Shintani</i>	
Differential Synchronizaiton Mechanism for a Real-Time Collaborative Web Page Editing System WFE-S	242
<i>Tadachika Ozono, Robin M.E. Swezey, Shun Shiramatsu, Toramatsu Shintani, Takushi Goda, Yudai Kato, and Ryota Inoue</i>	
Gathering Public Concerns from Web Towards Building Corpus of Japanese Regional Concerns	248
<i>Shun Shiramatsu, Norifumi Hirata, Robin M.E. Swezey, Hiroyuki Sano, Tadachika Ozono, and Toramatsu Shintani</i>	
A Template Independent Method for Large Online News Content Extraction	254
<i>Yu-Chieh Wu and Jie-Chi Yang</i>	
Effect of Learning Styles on Students' Motivation and Learning Achievement in Digital Game-based Learning	258
<i>Han-Yu Sung, Gwo-Jen Hwang, Chun-Ming Hung, and I-Wen Huang</i>	
The Clusters of Gaming Behavior in MMORPG: A Case Study in Taiwan	263
<i>Shih Ting Wang, Jie Chi Yang, Sherry Y. Chen, and Wen Chi Kuo</i>	
Using SenseCam for Capturing Ubiquitous Learning Log	267
<i>Bin Hou, Hiroaki Ogata, Mengmeng Li, Noriko Uosaki, and Kousuke Mouri</i>	
A Framework for Segmenting Customers Based on Probability Density of Transaction Data	273
<i>Ke Lu and Tetsuya Furukawa</i>	

A Weighted Cluster-based Chinese Text Categorization Approach: Incorporating with Word Clusters	279
<i>Yu-Chieh Wu and Jie-Chi Yang</i>	
Web Learning Contents for Reducing Mistake on Video Program Produce Based on Failure Episodic Knowledge	283
<i>Norihiro Nishio, Manabu Tonishi, and Takahiro Sugiyama</i>	
Mining Pure Patterns in Texts	285
<i>Yasuhiro Yamada, Tetsuya Nakatoh, Kensuke Baba, and Daisuke Ikeda</i>	
Analysis of Shrimp’s Mating Motion Using CHLAC Feature	291
<i>Takahito Oishi, Baigalmaa Tsagaan, and Hiromasa Nakatani</i>	
Word Search Method for Traditional Mongolian Script	293
<i>Hisashi Oshiro, Baigalmaa Tsagaan, and Hiromasa Nakatani</i>	
Image Feature Extraction from Tea Leaves for Measuring the Degree of the Steaming	295
<i>Yuya Kamisoyama, Baigalmaa Tsagaan, Takahiro Sugiyama, Hiromasa Nakatani, and Tadahiro Kitahashi</i>	
Evaluation of Educational Achievement: Comparison of Professional Education and Liberal Arts Education	297
<i>Makoto Nakajima</i>	
Human Motion Mining Supporting System Using Microsoft Kinect	299
<i>Youji Ochi and Yuya Takeda</i>	
The Cyclical Form Web-site Type Database of “Family Social Work in the Community-based Parenting Support Service Centers” for Re-education Program with Current Professional Service Providers	301
<i>Niikawa Yasuhiro</i>	
Development of Comprehensive I-E-O Model Incorporating Alternative Engagement: How to Measure Learning Outcomes of Japanese College Students	303
<i>Soichiro Aihara</i>	
Quality Assurance for Education Content and Evaluation of Mastery of Skills by Using Qualifying Examinations in University Classes	309
<i>Katsuichi Higuchi</i>	
Students’ Learning Experiences and their Outcomes: A Preliminary Study of its Relationship in Japan	314
<i>Tomoko Torii and Takashi Kawanabe</i>	
Backchannel of Interactions in Class	320
<i>Chie Oishi and Akihiro Kashiara</i>	
Estimating Word Difficulty Using Semantic Descriptions in Dictionaries and Web Data	324
<i>Kiyoaki Nakanishi, Nobuyuki Kobayashi, Hiromitsu Shiina, and Fumio Kitagawa</i>	

Extracting Topic Changes through Word Co-occurrence Graphs from Japanese Subtitles of VOD Lecture	330
<i>Nobuyuki Kobayashi, Noboru Koyama, Hiromitsu Shiina, and Fumio Kitagawa</i>	
Preschool Teachers' Internet Attitude and their Internet Self-efficacy: A Comparative Study between Pre-service and In-service Teachers in Taiwan	334
<i>Yi-Hui Lin and Jyh-Chong Liang</i>	
Acquisition of Characteristic TTSP Graph Patterns by Genetic Programming	340
<i>Satoshi Nagai, Tetsuhiro Miyahara, Yusuke Suzuki, and Tomoyuki Uchida</i>	
An Isolated-Subtree Inclusion for Unordered Trees	345
<i>Takahiro Hokazono, Tomohiro Kan, Yoshiyuki Yamamoto, and Kouichi Hirata</i>	
NNRMLR: A Combined Method of Nearest Neighbor Regression and Multiple Linear Regression	351
<i>Hideo Hirose, Yusuke Soejima, and Kei Hirose</i>	
A Study on Effect of IP Performance Degradation on Horizontal Sound Localization in a VoIP Phone Service with 3D Sound Effects	357
<i>Yoshihiro Ito, Toru Tahara, and Susumu Kuroyanagi</i>	
Author Index	362