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Preface

*“The true sign of intelligence is
not knowledge but imagination.”*

Albert Einstein

Applied artificial intelligence researchers have been focusing on developing and employing methods and systems to solve real-life problems in all areas including engineering, science, industry, automation & robotics, business & finance, cyberspace, and man-machine interactions. The 20th International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems (IEA/AIE-2007) held in Kyoto, Japan presented such work performed by many scientists worldwide.

The previous IEA/AIE conference held in Japan was the Ninth International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert systems (IEA/AIE-1996) in Fukuoka in 1996. The duration of 11 years between two conferences demanded drastic changes around applied artificial intelligence research. The main causes are the rapid expansion of the Internet and the deluge of electronic and on-line text data. The Program Committee focused on Asian-originating technologies, such as active mining, integration of the Internet and broadcasting, chance discovery, real-world interactions, and fuzzy logic applications. The first four are from Japan and the last one is from Taiwan and China.

We received 462 papers from all parts of the world. Each paper was sent to at least three Program Committee members for review. Only 116 papers were selected for presentation and publication in the proceedings. We would like to express our sincere thanks to the Program Committee and all the reviewers for their hard work.

The papers in the proceedings cover the following topics: application systems, agent-based system chance discovery and social network, constraint satisfaction, data mining, e-commerce, education, fuzzy logic, fuzzy system applications, heuristic search genetic algorithm machine learning manufacturing, neural network, real-world interaction, robot, speech, text processing, vision, and other applications.

The set of selected papers presented at IEA/AIE-2007, sponsored by the International Society of Applied Intelligence (ISAI) and the Graduate School of Informatics, Kyoto University, is offered in this volume. These papers highlight new trends of applied artificial intelligence and show how new research could lead to new and innovative applications. We hope that you find these papers to be educational, useful in your own research, and stimulating.

In addition to the ISAI and Graduate School of Informatics, Kyoto University, the main sponsors of the conference, our special thanks are due to the Association for the Advancement of Artificial Intelligence (AAAI, former American

Association for Artificial Intelligence), the Association for Computing Machinery (ACM/SIGART), the Canadian Society for the Computational Studies of Intelligence (CSCSI/SCEIO), the European Neural Network Society (ENNS), the Human Interface Society (HIS), the Institute of Electronics, Information and Communication Engineers (IEICE), the International Neural Network Society (INNS), the Information Processing Society of Japan (IPSJ), the Japanese Society for Artificial Intelligence (JSAI), the Robotics Society of Japan (RSJ), the Taiwanese Association for Artificial Intelligence (TAAI), and Texas State University San Marcos.

We wish to thank the members of the Program Committee, especially those who played specific roles: Kazunori Komatani (Publicity Chair), Tokyoaki Nishida (Program Co-chair), Yukio Osama (Program Co-chair), Shyi-Ming Chen and Takayuki Ito (Special Session Organizers), and Tetsuya Ogata (Local Organization Chair).

We would like to thank Secreatari@t Inc. and Miki Nishii for their efficiency in dealing with the registration and management issues. We would also like to thank the Artificial Intelligence Research Promotion Foundation and the Support Center for Advanced Telecommunications Technology Research, Foundations, Google Japan Inc., Honda Research Institute Japan Co., Ltd., and TOME R&D Inc. for their financial support for IEA/AIE-2007. There are many other participants, as well as all the authors, who were critically important in the organization of this conference. The conference would not have been possible without their valuable support.

April 2007

Hiroshi G. Okuno
Moonis Ali

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The IEA/AIE-2007 was organized by the International Society of Applied Intelligence and the Graduate School of Informatics, Kyoto University in cooperation with AAAI, ACM/SIGART, CSCSI/SCEIO, ENNS, HIS, IEICE, INNS, IPSJ, JSAI, RSJ, TAAI, and Texas State University San Marcos.

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Table of Contents

Keynotes

Towards New Content Services by Fusion of Web and Broadcasting Contents	1
<i>Katsumi Tanaka</i>	
Pattern Discovery from Graph-Structured Data - A Data Mining Perspective	12
<i>Hiroshi Motoda</i>	

Text Processing

A Collocation-Based WSD Model: RFR-SUM	23
<i>Weiguang Qu, Zhifang Sui, Genlin Ji, Shiwen Yu, and Junsheng Zhou</i>	
A Simple Probability Based Term Weighting Scheme for Automated Text Classification	33
<i>Ying Liu and Han Tong Loh</i>	
Text Classification for Healthcare Information Support	44
<i>Rey-Long Liu</i>	

[Special] Fuzzy System Applications I

Nurse Scheduling Using Fuzzy Multiple Objective Programming	54
<i>Seyda Topaloglu and Hasan Selim</i>	
Fuzzy Adaptive Threshold Determining in the Key Inheritance Based Sensor Networks	64
<i>Hae Young Lee and Tae Ho Cho</i>	
A New Approach for Evaluating Students' Answerscripts Based on Interval-Valued Fuzzy Sets	74
<i>Hui-Yu Wang and Shyi-Ming Chen</i>	

Vision I

An Intelligent Multimedia E-Learning System for Pronunciations	84
<i>Wen-Chen Huang, Tsai-Lu Chang-Chien, and Hsiu-Pi Lin</i>	
Phase-Based Feature Matching Under Illumination Variances	94
<i>Masaaki Nishino, Atsuto Maki, and Takashi Matsuyama</i>	
Text Extraction for Spam-Mail Image Filtering Using a Text Color Estimation Technique	105
<i>Ji-Soo Kim, S.H. Kim, H.J. Yang, H.J. Son, and W.P. Kim</i>	

[Special] Real World Interaction

Intention Through Interaction: Toward Mutual Intention in Real World Interactions	115
<i>Yasser F.O. Mohammad and Toyooki Nishida</i>	
An Interactive Framework for Document Retrieval and Presentation with Question-Answering Function in Restricted Domain	126
<i>Teruhisa Mitsu and Tatsuya Kawahara</i>	
Generating Cartoon-Style Summary of Daily Life with Multimedia Mobile Devices	135
<i>Sung-Bae Cho, Kyung-Joong Kim, and Keum-Sung Hwang</i>	

[Special] Fuzzy System Applications II

Economic Turning Point Forecasting Using Neural Network with Weighted Fuzzy Membership Functions	145
<i>Soo H. Chai and Joon S. Lim</i>	
A New Approach for Automatically Constructing Concept Maps Based on Fuzzy Rules	155
<i>Shih-Ming Bai and Shyi-Ming Chen</i>	
Application of Fuzzy Logic for Adaptive Interference Canceller in CDMA Systems	166
<i>Yung-Fa Huang, Ping-Ho Ting, and Tan-Hsu Tan</i>	

Vision II

Robust Multi-scale Full-Band Image Watermarking for Copyright Protection	176
<i>Jung-Chun Liu, Chu-Hsing Lin, Li-Ching Kuo, and Jen-Chieh Chang</i>	
Perimeter Intercepted Length and Color <i>t</i> -Value as Features for Nature-Image Retrieval	185
<i>Yung-Fu Chen, Meng-Hsiun Tsai, Chung-Chuan Cheng, Po-Chou Chan, and Yuan-Heng Zhong</i>	
Selecting an Appropriate Segmentation Method Automatically Using ANN Classifier	195
<i>Yih-Chih Chiou and Meng-Ru Tsai</i>	

Genetic Algorithm

Efficient Reinforcement Hybrid Evolutionary Learning for Recurrent Wavelet-Based Neuro-fuzzy Systems	207
<i>Cheng-Hung Chen, Cheng-Jian Lin, and Chi-Yung Lee</i>	
A Relation-Based Genetic Algorithm for Partitioning Problems with Applications	217
<i>Jiah-Shing Chen, Yao-Tang Lin, and Liang-Yu Chen</i>	

Constrained Optimization of a Newsboy Problem with Return Policy Using KKT Conditions and GA.....	227
<i>P.C. Yang, H.M. Wee, S.L. Chung, and S.H. Kang</i>	

[Special] Fuzzy System Applications III

Fuzzy Interpolative Reasoning Via Cutting and Transformations Techniques	238
<i>Yaun-Kai Ko and Shyi-Ming Chen</i>	
Using Fuzzy Theory for Packaging Attribute Deployment for New Notebook Computer Introduction	250
<i>Hsin Rau, Chien-Ping Liao, Wei-Jung Shiang, and Chiu-Hsiang Lin</i>	
Fuzzy System Model to Assist with Real Estate Appraisals	260
<i>Dariusz Król, Tadeusz Lasota, Wojciech Nalepa, and Bogdan Trawiński</i>	
Application of Fuzzy System on a Server-Dependent Queue Modeled with Empirical Bayesian Estimation	270
<i>Pei-Chun Lin and Jenhung Wang</i>	

Robot

Real-Time Auditory and Visual Talker Tracking Through Integrating EM Algorithm and Particle Filter	280
<i>Hyun-Don Kim, Kazunori Komatani, Tetsuya Ogata, and Hiroshi G. Okuno</i>	
Self-organizing Multiple Models for Imitation: Teaching a Robot to Dance the YMCA	291
<i>Axel Tidemann and Pinar Öztürk</i>	
An Efficient Flow-Shop Scheduling Algorithm Based on a Hybrid Particle Swarm Optimization Model	303
<i>I-Hong Kuo, Shi-Jinn Horng, Tzong-Wann Kao, Tsung-Lieh Lin, and Pingzhi Fan</i>	
Towards the Automated Design of Phased Array Ultrasonic Transducers – Using Particle Swarms to Find “Smart” Start Points.....	313
<i>Stephen Chen, Sarah Razzaqi, and Vincent Lupien</i>	

Poster

Solution of the Perspective-Three-Point Problem	324
<i>Loic Merckel and Toyooki Nishida</i>	
A Decision Support System for Underground Mining Method Selection	334
<i>Serafettin Alpaya and Mahmut Yavuz</i>	

Efficient Modified Bidirectional A^* Algorithm for Optimal Route-Finding	344
<i>Taeg-Keun Whangbo</i>	
Toward a Large Scale E-Market: A Greedy and Local Search Based Winner Determination	354
<i>Naoki Fukuta and Takayuki Ito</i>	
Agent Based Dynamic Job Shop Simulation System	364
<i>Şerafettin Alpay</i>	
A Manufacturing-Environmental Model Using Bayesian Belief Networks for Assembly Design Decision Support	374
<i>Wooi Ping Cheah, Kyoung-Yun Kim, Hyung-Jeong Yang, Sook-Young Choi, and Hyung-Jae Lee</i>	
Evaluation of Two Simultaneous Continuous Speech Recognition with ICA BSS and MFT-Based ASR	384
<i>Ryu Takeda, Shun'ichi Yamamoto, Kazunori Komatani, Tetsuya Ogata, and Hiroshi G. Okuno</i>	
Knowledge Based Discovery in Systems Biology Using CF-Induction . . .	395
<i>Andrei Doncescu, Katsumi Inoue, and Yoshitaka Yamamoto</i>	
Environment Recognition System for Biped Walking Robot Using Vision Based Sensor Fusion	405
<i>Tae-Koo Kang, Heejun Song, Dongwon Kim, and Gwi-Tae Park</i>	
Design of a SOA-Oriented E-Diagnostics System for Hydroelectric Generating Sets	415
<i>Liangliang Zhan, Yongchuan Zhang, Jianzhong Zhou, Yucheng Peng, and Zheng Li</i>	

Genetic Algorithm II

A Systematic Layout Planning of Visualizing Devices on a Non-rectangular Plane by Genetic Heuristics	424
<i>Chir-Ho Chang and Jin-Ling Lin</i>	
Promising Search Regions of Crossover Operators for Function Optimization	434
<i>Hiroshi Someya</i>	
Automatic Fingerprints Image Generation Using Evolutionary Algorithm	444
<i>Ung-Keun Cho, Jin-Hyuk Hong, and Sung-Bae Cho</i>	
A Hybrid Genetic Algorithm for the Cut Order Planning Problem	454
<i>Ahlem Bouziri and Rym M'hallah</i>	

Fuzzy Logic I

Supervised Adaptive Control of Unknown Nonlinear Systems Using Fuzzily Blended Time-Varying Canonical Model	464
<i>Yau-Zen Chang and Zhi-Ren Tsai</i>	
Multi-agent System with Hybrid Intelligence Using Neural Network and Fuzzy Inference Techniques	473
<i>Kevin I-Kai Wang, Waleed H. Abdulla, and Zoran Salcic</i>	
Analysis of Log Files Applying Mining Techniques and Fuzzy Logic	483
<i>Víctor H. Escobar-Jeria, María J. Martín-Bautista, Daniel Sánchez, and María-Amparo Vila</i>	
Stability Analysis for Nonlinear Systems Subjected to External Force . . .	493
<i>Ken Yeh, Cheng-Wu Chen, Shu-Hao Lin, Chen-Yuan Chen, Chung-Hung Tsai, and Jine-Lih Shen</i>	

Manufacturing

Integrated Framework for Reverse Logistics	501
<i>Heng-Li Yang and Chen-Shu Wang</i>	
Screening Paper Formation Variations on Production Line	511
<i>Marcus Ejnarsson, Carl Magnus Nilsson, and Antanas Verikas</i>	
Multi-modal Data Integration Using Graph for Collaborative Assembly Design Information Sharing and Reuse	521
<i>Hyung-Jae Lee, Kyoung-Yun Kim, Hyung-Jeong Yang, Soo-Hyung Kim, and Sook-Young Choi</i>	
Enhanced Probabilistic Filtering for Improving the Efficiency of Local Searches	531
<i>Byounggho Kang and Kwang Ryel Ryu</i>	

Data Mining I

A Weighted Feature C-Means Clustering Algorithm for Case Indexing and Retrieval in Cased-Based Reasoning	541
<i>Chuang-Cheng Chiu and Chieh-Yuan Tsai</i>	
Neural Networks for Inflow Forecasting Using Precipitation Information	552
<i>Karla Figueiredo, Carlos R. Hall Barbosa, André V.A. Da Cruz, Marley Vellasco, Marco Aurélio C. Pacheco, and Roxana J. Conteras</i>	
A Gradational Reduction Approach for Mining Sequential Patterns	562
<i>Jen-Peng Huang, Guo-Cheng Lan, and Huang-Cheng Kuo</i>	

A Kernel Method for Measuring Structural Similarity Between XML Documents	572
<i>Buhwan Jeong, Daewon Lee, Hyunbo Cho, and Boonserm Kulvatunyong</i>	

Neural Network I

A Neural Network Based Data Least Squares Algorithm for Channel Equalization.....	582
<i>Jun-Seok Lim</i>	
Novelty Detection in Large-Vehicle Turbocharger Operation	591
<i>David A. Clifton, Peter R. Bannister, and Lionel Tarassenko</i>	
Equalization of 16 QAM Signals with Reduced BiLinear Recurrent Neural Network	601
<i>Dong-Chul Park and Yunsik Lee</i>	
Enhanced Neural Filter Design and Its Application to the Active Control of Nonlinear Noise	611
<i>Cheng-Yuan Chang, I-Ling Chung, Chang-Min Chou, and Fuh-Hsin Hwang</i>	

Constraint Satisfaction

Case Analysis of Criminal Behaviour	621
<i>Tibor Bosse, Charlotte Gerritsen, and Jan Treur</i>	
Diagnosing Dependent Failures in the Hardware and Software of Mobile Autonomous Robots.....	633
<i>Jörg Weber and Franz Wotawa</i>	
PrDLs: A New Kind of Probabilistic Description Logics About Belief ...	644
<i>Jia Tao, Zhao Wen, Wang Hanpin, and Wang Lifu</i>	
Multi-constraint System Scheduling Using Dynamic and Delay Ant Colony System	655
<i>Shih-Tang Lo, Ruey-Maw Chen, and Yueh-Min Huang</i>	

Data Mining II

Constructing Domain Ontology Using Structural and Semantic Characteristics of Web-Table Head	665
<i>Sung-won Jung, Mi-young Kang, and Hyuk-chul Kwon</i>	
Maintenance of Fast Updated Frequent Trees for Record Deletion Based on Prelarge Concepts	675
<i>Chun-Wei Lin, Tzung-Pei Hong, Wen-Hsiang Lu, and Chih-Hung Wu</i>	

Solving a Committee Formation and Scheduling Problem by Frequent Itemset Mining	685
<i>Chienwen Wu</i>	

Neural Network II

Dual Gradient Descent Algorithm on Two-Layered Feed-Forward Artificial Neural Networks	696
<i>Bumghi Choi, Ju-Hong Lee, and Tae-Su Park</i>	
A New Hybrid Learning Algorithm for Drifting Environments	705
<i>Khosrow Kaikhah</i>	
Solving Inequality Constraints Job Scheduling Problem by Slack Competitive Neural Scheme	715
<i>Ruey-Maw Chen, Shih-Tang Lo, and Yueh-Min Huang</i>	

Fuzzy Logic II

Intelligent OS Process Scheduling Using Fuzzy Inference with User Models	725
<i>Sungsoo Lim and Sung-Bae Cho</i>	
Cardinality-Based Fuzzy Time Series for Forecasting Enrollments	735
<i>Jing-Rong Chang, Ya-Ting Lee, Shu-Ying Liao, and Ching-Hsue Cheng</i>	
A New Fuzzy Interpolative Reasoning Method for Sparse Fuzzy Rule-Based Systems	745
<i>Li-Wei Lee and Shyi-Ming Chen</i>	

Machine Learning I

A New Multi-class Support Vector Machine with Multi-sphere in the Feature Space	756
<i>Pei-Yi Hao and Yen-Hsiu Lin</i>	
Construction of Prediction Module for Successful Ventilator Weaning ...	766
<i>Jiin-Chyr Hsu, Yung-Fu Chen, Hsuan-Hung Lin, Chi-Hsiang Li, and Xiaoyi Jiang</i>	
Extension of ICF Classifiers to Real World Data Sets	776
<i>Kazuya Haraguchi and Hiroshi Nagamochi</i>	

[Special] Chance Discovery and Social Network I

Hierarchical Visualization for Chance Discovery	786
<i>Brett Bojduj and Clark S. Turner</i>	

Episodic Memory for Ubiquitous Multimedia Contents Management System	796
<i>Kyung-Joong Kim, Myung-Chul Jung, and Sung-Bae Cho</i>	

Catalyst Personality for Fostering Communication Among Groups with Opposing Preference	806
<i>Yoshiharu Maeno, Yukio Ohsawa, and Takaichi Ito</i>	

Education

On Using Learning Automata to Model a Student's Behavior in a Tutorial-like System	813
<i>Khaled Hashem and B. John Oommen</i>	

Test-Sheet Composition Using Immune Algorithm for E-Learning Application	823
<i>Chin-Ling Lee, Chih-Hui Huang, and Cheng-Jian Lin</i>	

PDA Plant Search System Based on the Characteristics of Leaves Using Fuzzy Function	834
<i>Shu-Chen Cheng, Jhen-Jie Zhou, and Bing-Hong Liou</i>	

Machine Learning II

Stochastic Point Location in Non-stationary Environments and Its Applications	845
<i>B. John Oommen, Sang-Woon Kim, Mathew Samuel, and Ole-Christoffer Granmo</i>	

Quick Adaptation to Changing Concepts by Sensitive Detection	855
<i>Yoshiaki Yasumura, Naho Kitani, and Kuniaki Uehara</i>	

ACIK: Association Classifier Based on Itemset Kernel	865
<i>Yang Zhang, Yongge Liu, Xu Jing, and Jianfeng Yan</i>	

[Special] Chance Discovery and Social Network II

Risk Discovery Based on Recommendation Flow Analysis on Social Networks	876
<i>Jason J. Jung and Geun-Sik Jo</i>	

Using Conceptual Scenario Diagrams and Integrated Scenario Map to Detect the Financial Trend	886
<i>Chao-Fu Hong, Tzu-Fu Chiu, Yu-Ting Chiu, and Mu-Hua Lin</i>	

Chance Discovery in Credit Risk Management	896
<i>Shinichi Goda and Yukio Ohsawa</i>	

Speech

The Design of Phoneme Grouping for Coarse Phoneme Recognition	905
<i>Kazuhiro Nakadai, Ryota Sumiya, Mikio Nakano, Koichi Ichige, Yasuo Hirose, and Hiroshi Tsujino</i>	
An Improved Voice Activity Detection Algorithm for GSM Adaptive Multi-Rate Speech Codec Based on Wavelet and Support Vector Machine	915
<i>Shi-Huang Chen, Yaotsu Chang, and T.K. Truong</i>	
The PICA Framework for Performance Analysis of Pattern Recognition Systems and Its Application in Broadcast News Segmentation	925
<i>Xiangdong Wang, Meiyin Li, Shouxun Lin, Yueliang Qian, and Qun Liu</i>	

[Special] E-commerce I

The Theory of Maximal Social Welfare Feasible Coalition	935
<i>Laor Boongasame, Veera Boonjing, and Ho-fung Leung</i>	
Recommender Agent Based on Social Network	943
<i>Heng-Li Yang and Hsiao-Fang Yang</i>	
A New Pooled Buying Method Based on Risk Management	953
<i>Tokuro Matsuo</i>	
The Representation of e-Contracts as Default Theories	963
<i>Georgios K. Giannikis and Aspasia Daskalopulu</i>	

Heuristic Search I

Competitive Ant Colony Optimisation	974
<i>Marcus Randall</i>	
Optimization of Dynamic Combinatorial Optimization Problems Through Truth Maintenance	984
<i>Brett Bojduj, Dennis Taylor, and Franz Kurfess</i>	
A Microcanonical Optimization Algorithm for BDD Minimization Problem	992
<i>Sang-Young Cho, Minna Lee, and Yoojin Chung</i>	
A Lot Size Model for Deteriorating Inventory with Back-Order Cancellation	1002
<i>Peng-Sheng You and Yi-Chih Hsieh</i>	

Application System

An Intermodal Transport Network Planning Algorithm Using Dynamic Programming.....	1012
<i>Jae Hyung Cho, Hyun Soo Kim, Hyung Rim Choi, Nam Kyu Park, and Moo Hong Kang</i>	
Immune Inspired Optimizer of Combustion Process in Power Boiler	1022
<i>Konrad Świrski and Konrad Wojdan</i>	
Dynamic Search Spaces for Coordinated Autonomous Marine Search and Tracking	1032
<i>Benjamin Lavis and Tomonari Furukawa</i>	
Composite Endoscope Images from Massive Inner Intestine Photos	1042
<i>Eunjung Kim, Kwan-Hee Yoo, Je-Hoon Lee, Yong-Dae Kim, and Younggap You</i>	

[Special] E-commerce II

Using Trust in Collaborative Filtering Recommendation	1052
<i>Chein-Shung Hwang and Yu-Pin Chen</i>	
AdaptRank: A Hybrid Method for Improving Recommendation Recall	1061
<i>Maciej Kiewra and Ngoc Thanh Nguyen</i>	
Combinatorial Auction with Minimal Resource Requirements	1072
<i>Fu-Shiung Hsieh</i>	

Agent-Based System

Effectiveness of Autonomous Network Monitoring Based on Intelligent-Agent-Mediated Status Information.....	1078
<i>Susumu Konno, Sameer Abar, Yukio Iwaya, and Tetsuo Kinoshita</i>	
Design and Implementation of Interactive Design Environment of Agent System	1088
<i>Takahiro Uchiya, Takahide Maemura, Xiaolu Li, and Tetsuo Kinoshita</i>	
An Agent-Based Approach to Knapsack Optimization Problems	1098
<i>Sergey Polyakovsky and Rym M'Hallah</i>	

Heuristic Search II

Constraint-Based Approach for Steelmaking–Continuous Casting Rescheduling	1108
<i>Tieke Li and Dongfen Guo</i>	

Study on Loop Problem in Opening Database for Chinese Chess Programs	1118
<i>Shi-Jim Yen, Tai-Ning Yang, Jr-Chang Chen, and Shun-Chin Hsu</i>	
Job Shop Scheduling Optimization Using Multi-modal Immune Algorithm.....	1127
<i>Guan-Chun Luh and Chung-Huei Chueh</i>	
Simulated Annealing Algorithm for Solving Network Expanded Problem in Wireless ATM Network.....	1138
<i>Der-Rong Din</i>	
 Other Applications	
An Intrusion Detection Based on Support Vector Machines with a Voting Weight Schema.....	1148
<i>Rung-Ching Chen and Su-Ping Chen</i>	
An Ontology-Supported and Fully-Automatic Annotation Technology for Semantic Portals.....	1158
<i>Sheng-Yuan Yang</i>	
Development and Evaluation of an Intelligent Colour Planning Support System for Townscapes	1169
<i>Yuichiro Kinoshita, Eric W. Cooper, and Katsuari Kamei</i>	
A Testing Device for the Human Ability to Utilise Beneficial Environmental Features.....	1180
<i>Blagovest Vladimirov, Hiromi Mochiyama, and Hideo Fujimoto</i>	
Author Index	1191