

2013 International Conference on Fuzzy Theory and Its Applications

(iFUZZY 2013)

**Taipei, Taiwan
6-8 December 2013**



**IEEE Catalog Number: CFP1322T-POD
ISBN: 978-1-4799-0385-6**

TABLE OF CONTENTS

Adaptive Type-2 Fuzzy Tracking Control Of Wheeled Mobile Robots	1
<i>M. Kao, C. Lin, C. Feng, T. Li, H. Yen</i>	
Development Of A Fuzzy Logic Wall Following Controller For Steering Mobile Robots	7
<i>Fahmizal, C. Kuo</i>	
Fuzzy Control Design For Nonlinear Dynamic Systems Using Constrained H8/LTR	13
<i>A. Ashfahani, S. Su, T. Agustinah</i>	
Piezoelectric Acuator Design With Micro Positioning Capability And It's Practical Implementation: Fuzzy Approach	19
<i>Y. Chen</i>	
Adaptive Fuzzy Control For A Class Of MIMO Nonaffine Nonlinear Systems	25
<i>J. Wen, Y. Du</i>	
Intelligent Multi-Behavior Control And Coordination For The Autonomous Differential Drive Mobile Robot	31
<i>M. Lee, F. Chiu</i>	
Adaptive Assessment System For Human Performance Evaluation On Game Of Go	37
<i>C. Lee, M. Wang, M. Wu, O. Teytaud, S. Yen</i>	
Fuzzy Predicate Logic For Knowledge Representation	43
<i>P. Reddy</i>	
A Horizon-Vertical Dimension Reduction Method For Classification Of Cancer Cell Gene In A Fuzzy Neural Network	49
<i>T. Zhang, C. Chen</i>	
Implementation Of Human Following Mission By Using Fuzzy Head Motion Control And Q-Learning Wheel Motion Control For Home Service Robot	55
<i>R. Deng, Y. Wang, C. Lin, T. Li</i>	
Some Methods Of Fuzzy Conditional Inference And Fuzzy Reasoning	61
<i>P. Reddy</i>	
Applying Rough Set Method To Analyze The Weighting Of Relevant Subjects In Elementary School Test Scores	65
<i>Y. Chin, H. Chen, K. Wen</i>	
Intelligent Complementary Sliding Mode Fault Tolerant Control For Six-Phase Motor Drive System Using TSK Type FNN	71
<i>Y. Hung, F. Lin</i>	
Speed-Control Of A PMSM Based On Integral-Fuzzy Control	77
<i>H. Chung, C. Hou, C. Chao</i>	
A Novel Evolutionary Operator For Variable-Dimensional Optimization	83
<i>C. Huo, T. Sun</i>	
Individual State Variance Constrained Fuzzy Control For Discrete Nonlinear Stochastic Systems	88
<i>W. Chang, B. Huang, Z. Fu</i>	
Nonlinear Rudder Roll Stabilization Using Fuzzy Gain Scheduling - PID Controller For Naval Vessel	94
<i>M. Santoso, S. Su, A. Aisjah</i>	
Design Of Robust Observer For T-S Fuzzy Time-Delayed Systems Subject To Unknown Inputs	100
<i>H. Karimi, M. Chadli</i>	
Fuzzy Dynamic Sliding Mode Control Design For High Order Disturbed Systems	105
<i>H. Karimi, B. Wang, P. Shi</i>	
The Robust Previous Step Adaptive Fuzzy Controller For Nonlinear Systems	111
<i>T. Tao</i>	
Linguistic Fuzzy Modeling Approach For Daily Peak Load Forecasting	116
<i>J. Yu, H. Lee, Y. Jeong, S. Kim</i>	
Forecast Of Marine Traffic Volume Using Time Series Model	122
<i>S. Yoo, J. Jeong, J. Jong, G. Park</i>	
A Part-Based Rotational Invariant Hand Detection	127
<i>J. Kim, J. Baek, E. Kim</i>	
A Fuzzy Logic Approach For Cloud Classification Based On Near-Infrared Image Features	130
<i>K. Kim, D. Song, Y. Bae</i>	
A PSO Method For Optimal Design Of PID Controller In Motion Planning Of A Mobile Robot	134
<i>L. Lai, J. Jeng, W. Li, Y. Chang, G. Huang, Y. Zhang</i>	

A Design Of Large Space Automatic Cleaning Robot With Omni-Directional Wheels	140
<i>W. Chen, S. Chen, L. Wang, S. Cheng, S. Chang, M. Lu</i>	
Agent-Based Knowledge Evolution Management And Fuzzy Rule-Based Evolution Detection In Bayesian Networks	146
<i>K. Lee, K. Lee</i>	
Constructing An Ensemble Learning Model By Using Euclidean Distance	150
<i>B. Fan, G. Zhang, H. Li</i>	
Study On Least Trimmed Absolute Deviations Artificial Neural Network	156
<i>S. Liao, J. Chang, C. Lin</i>	
Implementing Fuzzy Modeling Of Decision Support For Crop Planting Management	161
<i>M. Salleh</i>	
The Criteria For Evaluating The Effectiveness Of Preference Aggregation Methods	167
<i>C. Chen, C. Lin, F. Chen, W. Hung</i>	
An Observer-Based Model Reference Adaptive Iterative Learning Controller For Nonlinear Systems Without State Measurement	171
<i>Y. Wang, C. Chien</i>	
A Practical Design Approach To Automatic Model Construction And Controller Design For F16 Aircraft	177
<i>D. Ogura, Y. Chen, M. Tanaka, K. Tanaka</i>	
A Fuzzy Logic Navigated Service Mobile Robot	183
<i>M. Lee, F. Chiu</i>	
An Autonomous Mobile Robot For Indoor Security Patrol	189
<i>M. Lee, N. Hung, F. Chiu</i>	
Remote Sensing And Analysis Using Autonomous Mobile Robot With Onboard Micro-Spectrometer	195
<i>M. Lee, C. Zhuo, F. Chiu</i>	
Aerial Visual Aid System For Ground Mobile Robot Behavior Controller In Joint Operation	201
<i>M. Lee, N. Hung</i>	
Stabilization Of Uncertain Fuzzy Time-Delay Systems Via Descriptor System Approach	207
<i>K. Lin</i>	
Passive Fuzzy Control For Ball And Beam Systems Via Takagi-Sugeno Fuzzy Model With Multiplicative Noises	212
<i>W. Chang, F. Hsu, B. Huang</i>	
Nonlinear Intelligent Reentry Control For Hypersonic Vehicles Based On B-Spline FLNDO	218
<i>Y. Du, J. Wen, Y. Lu, Y. Cheng</i>	
Intelligent Modeling For Thermal Management Of Cylindrical Lithium Ion Batteries	224
<i>Z. Liu, H. Li</i>	
Fuzzy Operator And Three Dimensional Neural Network For Pattern Recognition Problem	230
<i>A. Dyusembaev, D. Kaliagharov, M. Grishko</i>	
Design And Implementation Of AMBA ASB APB Bridge	234
<i>B. Manu, P. Prabhavathi</i>	
Intelligent Adaptive Steering Control Using IT2FNN For Uncertain Seatless Electric Unicycles	239
<i>C. Tsai, H. Yap</i>	
Self-Balancing Control Using Wavelet Fuzzy CMAC For Uncertain Omnidirectional Ball-Driven Vehicles	245
<i>C. Souleymane, C. Tsai, Y. Chiu</i>	
Fuzzy Expert System Based Sensor And Actuator Fault Diagnosis For Continuous Stirred Tank Reactor	251
<i>M. Geetha, J. Jovitha</i>	
Multi-Objective Linear Fractional Programming: A Fuzzy Efficient Interactive Goal Programming Method	258
<i>P. Singh</i>	
Cooperatively Coevolving Differential Evolution For Compensatory Neural Fuzzy Networks	264
<i>C. Chen, W. Chen</i>	
A Motorcycle Parking Lot Management System Based On RFID	268
<i>H. Shieh, W. Chang, S. Lin, S. Jhang</i>	
Interval Continuous-Time Markov Chains Simulation	273
<i>S. Galdino</i>	
Designing Mamdani Type Fuzzy Rule Using A Collaborative FCM Scheme	279
<i>C. Lin, M. Prasad, J. Chang</i>	
A Fuzzy Color Classification For Logos Retrieval	283
<i>C. Lin, C. Su, T. Lu, H. Huang, K. Fan, T. Hsieh</i>	

PI Controller Design Based On Genetic Algorithm And Parameter Space	288
<i>S. Hsieh, G. Chen, J. Perng, D. Tsai</i>	
Motion Guidance Of Mobile Robot Using Laser Range Finder	293
<i>K. Hsia, J. Guo, K. Su</i>	
A Self-Constructing Type-2 Fuzzy Neural Network For Impulse Noise Removal In Digital Images	299
<i>C. Ouyang, P. Cheng</i>	
A Quantum-Inspired Evolutionary Clustering Algorithm	305
<i>C. Tsai, Y. Liao, M. Chiang</i>	
Accuracy Enhancement For Fuzzy Time Series Using Modified Fuzzy Relationship	311
<i>K. Maneesilp</i>	
Fuzzy-Rough Nearest Neighbour Classifier For Person Authentication Using EEG Signals	316
<i>S. Liew, Y. Choo, Y. Low</i>	
PSO-ANFIS Tuned Real-Time VVoIP In Cloud With Access Control Security	322
<i>B. Chang, H. Tsai, C. Chen, Y. Chang, C. Huang</i>	
A Fuzzy Approach To Assess The Indication Of Dementia Based On Magnetic Reasoning Imaging	328
<i>Y. Huang, B. Yang, S. Zaza, W. Liu</i>	
Linguistic Aggregation Method For Fuzzy Multi-Attribute Decision Making	334
<i>Z. Tarmudi, M. Abdullah</i>	
Design Of An Un-Fuzzy Controller For A Tank Level Control	340
<i>M. Katoh, T. Ueno</i>	
Applying Fuzzy Expert System To Information Security Risk Assessment - A Case Study On An Attendance System	346
<i>L. Chang, Z. Lee</i>	
A Refined DRSA Model For The Financial Performance Prediction Of Commercial Banks	352
<i>K. Shen, G. Tzeng</i>	
An Improved Quantum-Behaved Particle Swarm Optimization Algorithm For Training Fuzzy Neural Networks	358
<i>C. Chiang</i>	
Learn And Self-Examination Algorithm	364
<i>H. Chung, S. Wang</i>	
Estimation For Presented Images By EEGs During Recognition And Recalling	370
<i>T. Yamanoi, Y. Tanaka, H. Toyoshima, M. Otsuki, S. Ohnishi, T. Yamazaki, M. Sugeno</i>	
Image Segmentation Using Shadowed C-Means And Kernel Method	374
<i>L. Chen, J. Zou, C. Chen</i>	
Text Material Design For Fuzzy Emotional Speech Corpus Based On Persian Semantic And Structure	380
<i>M. Savargiv, A. Bastanfard</i>	
Accident Detection And Action System Using Fuzzy Logic Theory	385
<i>A. Alkandari, I. Al-Shaikhli, A. Najaa, M. Aljandal</i>	
Evolutionary Fuzzy Control Using Rule-Based Multi-Objective Genetic Algorithms	391
<i>C. Hsu, C. Juang, Y. Jhan</i>	
Modeling Transaction Costs And Skewness In Portfolio: Application Of Fuzzy Approach	397
<i>J. Yu, W. Chiou, W. Chang, W. Lee</i>	
Load Prediction Of Virtual Machine Servers Using Genetic Expression Programming	402
<i>L. Hung, C. Wu</i>	
Improved Arithmetic Operations On Generalized Fuzzy Numbers	407
<i>L. Dat, C. Dung, S. Chou, V. Yu</i>	
A Discrete Wavelet Transform And Fuzzy Logic Algorithm For Identifying The Location Of Fault In Underground Distribution System	415
<i>S. Bunjongjit, A. Ngaopitakkul, C. Pothisarn</i>	
Mining High Fuzzy Utility Sequential Patterns	420
<i>G. Lan, T. Hong, H. Huang, S. Pan</i>	
A Study On A Fuzzy Clustering For Mixex Numerical And Categorical Incomplete Data	425
<i>T. Furukawa, S. Ohnishi, T. Yamanoi</i>	
Multi-Attribute Decision Making For Data-Centric Routing In Wireless Sensor Network	429
<i>J. Zhou, C. Chen, L. Chen</i>	
Generalized Hesitant Fuzzy Prioritized Einstein Weighted Averaging Operator And Its Application In Group Decision Making	435
<i>X. Zhou, Q. Li</i>	
Fully Cascadable High-Order Current-Mode CCH-Based Universal Filter	441
<i>C. Lee</i>	

An Activity-Based Replica Placement Method Of Energy-Conservation	446
<i>X. Zhao, L. Wang</i>	
The $(\mathcal{E}, \mathcal{E} \vee \mathcal{Q}(\lambda, \mu))$ - Fuzzy Implicative Filter Of Lattice Implication Algebra	452
<i>X. Fu, Z. Liao, C. Zhu</i>	
Intuitionistic Fuzzy Complemented Subsemirings.....	460
<i>Z. Liao, C. Zhu, X. Luo</i>	
Fuzzy-Model-Based Controller Design For Nonlinear Electromagnetic Suspension Systems	465
<i>X. Su, P. Shi, L. Wu</i>	
Applying 2-Tuple Linguistic Variables To Assess The Teaching Performance Based On The Viewpoints Of Students	470
<i>C. Lin, C. Chen, F. Chen</i>	
Determining Motor's Quality Types Using Principal Component Analysis On Current Waveforms.....	475
<i>L. Lin, Y. Yeh</i>	
Prediction Table To Improve Maritime Situation Awareness By VTS Operator	479
<i>J. Jeong, G. Park, J. Kim</i>	
A Parametric-Fuzzy Logic System For Paint Cost Estimation Of Products With Uncertain Geometric Characteristics	482
<i>A. Chansaad, S. Chairapat, P. Yenradee</i>	
A Revised Bare Bone Particle Swarm Optimizer And Its Variant.....	488
<i>C. Chen</i>	
Author Index	