FM02

Poster Session

13:30-15:30 **Chair1 : Tae-Jung Lho (Tongmyoung Univ., Korea)**
Room : Base 2nd Floor-Zillertal **Chair2 :**

FM02-37

A novel Neuro Fuzzy Modeling using Gaussian Mixture Models

Sung Suk Kim, Keun Chang Kwak, Sung Soo Kim, Myung Geun Chun, Jeong Woong Ryu(Chungbuk Nat'l Univ., KOREA)

We propose a novel neuro-fuzzy system based on an efficient clustering method. It is a very useful method that improves the performance of a fuzzy model with small number of fuzzy rules. The fuzzy clustering methods are studied in the wide range of fuzzy modeling. One of them, the grid partition method has problem of exponentially increasing number of rules when the dimension of input or number of membership function is linearly increased. On the other hand, the Expectation Maximization algorithm is an efficient estimation for unknown parameters of the Gaussian mixture model. Here it is noted that the parameters can be used for fuzzy clustering method. In a fuzzy modeling, it is desired that...

FM02-38

An Evolutionary Algorithm preventing Consanguineous Marriage

Woojin Oh, Se-Young Oh(POSTECH, KOREA)

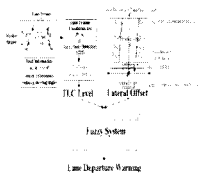
Evolutionary Algorithm is the general method that can search the optimum value for the various problems. Evolutionary method consists of random selection, crossover, mutation, etc. Since the next generation is selected based on the fitness values, the crossover between chromosomes does not have any restrictions. Not only normal marriage but also consanguineous marriage will take place. In human world, consanguineous marriage was reported to cause various genetic defects, such as poor immunity about new diseases and new environment disaster. These problems translate into searching for the local optimum, not the global optimum. So, a new evolutionary algorithm is needed that prevents traps to ...

FM02-39

A New Lane Departure Warning System using a Support Vector Machine Classifier and a Fuzzy System

Sam Yong Kim, Se Young Oh(POSTECH, KOREA)

- Lane detection by TFALDA
- SVM for large scale data and multi-class classification problem
- TLC classification
- Lateral offset estimation by IPT
- Lane departure warning by a fuzzy system
- Experimental results by HiLS
- Conclusion



FM02-40

Multiobjective fuzzy control system using reinforcement learning

Kang Dong-Oh(ETRI, KOREA), Bien Zeungnam(KAIST, KOREA)

In practical control area, there are many examples with multiple objectives which may conflict or compete with each other like overhead crane control, automatic train operation, and refuse incinerator plant control, etc. These kinds of control problems are called multiobjective control problems, where it is difficult to provide the desired performance with control strategies based on single-objective optimization. Because the conventional control theories usually treat the control problem as the single objective optimization problem, the methods are not adequate to treat the multiobjective control problems. Particularly, in case of large scale systems or ill-defined systems, the multiple obj...

FM02-41

Maneuvering Target Tracking Using Intelligent Control Techniques

Bum-Jik Lee, Young-Hoon Joo(Kunsan Nat'l Univ., KOREA), Jin-Bae Park(Yonsei Univ., KOREA)

- Introduction
- Previous Works
- IKF and IIMM Method
- Simulation Results
- Conclusions

FM02-42

Wavelet-Based Fuzzy System Modeling using mGA

Jin Young Yu, Jung Chan Kim, Yeun Woo Lee, Young Hoon Joo(Kunsan Nat'l Univ., KOREA), Jin Bae Park(Yonsei Univ., KOREA)

- In this paper, the method that the coefficients of wavelet transform and the parameters of wavelet function is simultaneously self-tuned using mGA is proposed.
- Figure shows actual output and model output.