

# **2007 4<sup>th</sup> International Symposium on Applied Computational Intelligence and Informatics**

**Timisoara, Romania  
17-18 May 2007**



**IEEE Catalog Number:  
ISBN:**

**07EX1788  
1-4244-1234-X**

# Table of Contents

<b>Geometric Approach to Nonlinear Adaptive Control</b> .....	1
<i>Jozsef K. Tar and Imre J. Rudas</i>	
<b>Migrative Triangular Norms</b> .....	16
<i>Janos Fodor and Imre J. Rudas</i>	
<b>Communication and Knowledge Intensive Engineering Modeling in Virtual Spaces</b> .....	19
<i>László Horváth, Imre J. Rudas, Simona Vaivoda and Zsuzsa Preitl</i>	
<b>Axioms of the System Behavior in FLC Using Uninorms</b> .....	25
<i>Márta Takács</i>	
<b>Calibration System for Dial Gauges</b> .....	30
<i>Gyula Hermann</i>	
<b>Future Transportation: Intelligent Vehicles in Intelligent Environment</b> .....	33
<i>László Nádai and Roland Kovács</i>	
<b>Towards an Attractor-Based Natural Language Modeling</b> .....	37
<i>M. Crisan</i>	
<b>Haptic Human Interfaces for Robotic Telemanipulation</b> .....	41
<i>Emil M. Petriu, Pierre Payeur and Ana-Maria Cretu</i>	
<b>A Flexible Chronic Care Model Implementation in a GP Software</b> .....	47
<i>V. Stoicu-Tivadar and D. Berian</i>	
<b>Interpolative Models Regarding the Health Status of a Population</b> .....	52
<i>D. Berian and T. L. Dragomir</i>	
<b>Providing Grid Systems Dependability and Security</b> .....	58
<i>Răzvan Bogdan</i>	
<b>Dynamic Policy Based Replication on the Grid</b> .....	64
<i>Dacian Tudor, Georgiana Macariu and Vladimir Cretu</i>	
<b>Problem Setting and Modeling in Vehicles and Pedestrians Traffic Control Using Sensor Networks</b> .....	69
<i>O. Bania, R.-E. Precup and D.-I. Curiac</i>	
<b>Developing a Logopaedic Mobile Device Using an FPGA</b> .....	75
<i>Marius Cristian CERLINC, Adrian GRAUR, Stefan Gheorghe PENTIUC and Tudor Ioan CERLINC</i>	
<b>Two-Degree-Of-Freedom Fuzzy Control in Decentralized Trajectory Tracking</b> .....	79
<i>R.-E. Precup, Z. Preitl, S. Preitl, S. Vaivoda, J.K. Tar and M. Takács</i>	

<b>Robustness Analysis of a Novel Adaptive Control based on Geometric Approach</b> .....	<b>85</b>
<i>József K. Tar, and János F. Bito</i>	
<b>A Web Connected Smart Sensor</b> .....	<b>91</b>
<i>M. Popa, A. S. Popa and C. Patitoiu</i>	
<b>FPGA Parallel Implementation of CMAC Type Neural Network with on Chip Learning</b> .....	<b>97</b>
<i>S.T. Brassai, L. Bakó, S. Dan</i>	
<b>Using Plausible Reasoning Theory</b> .....	<b>102</b>
<i>Claudiu Pozna</i>	
<b>Expert System for Medical Predictions</b> .....	<b>108</b>
<i>Doina Dragulescu and Adriana Albu</i>	
<b>Fuzzy Logic Controller for the Liénard System</b> .....	<b>114</b>
<i>Marius L. Tomescu</i>	
<b>A Computational Intelligence Approach for Ranking Risk Factors in Preterm Birth</b> .....	<b>119</b>
<i>Daniela Zahariea, Stefan Holbanb, Diana Lungeanuc and Dan Navoland</i>	
<b>The Effect of Different Fuzzy Partition Parameterization Strategies in Gradient Descent Parameter Identifi cation</b> .....	<b>125</b>
<b>Towards Scalable Distributed Control of Unmanned Autonomous Vehicles</b> .....	<b>131</b>
<i>Meng Wang, Alex Doboli, Thomas Robertazzi, Simona Doboli and Daniel Curiac</i>	
<b>Object Description Based Processes for Higher Education in Global Computer Networks</b> .....	<b>137</b>
<i>Radu-Emil Precup, József Gáti, Gyula Kártyás and Stefan Preitl</i>	
<b>A Simple Control Solution for Traction Motor Used in Hybrid Vehicles</b> .....	<b>141</b>
<i>Zsuzsa Preitl, Peter Bauer and Jozsef Bokor</i>	
<b>Geometric Theory and Control of Linear Parameter Varying Systems</b> .....	<b>147</b>
<i>József Bokor</i>	
<b>Local Wireless Positioning System</b> .....	<b>155</b>
<i>Marius Marcu, Sebastian Fuicu and Anania Girban</i>	
<b>Tree-In-Motion Mapping: A Multi-Agent Solution for Environment Monitoring</b> .....	<b>161</b>
<i>Rami Abielmona, Emil M. Petriu and Voicu Groza</i>	

<b>Performances Analysis on Video Transmission in a Wireless Sensor Network</b> .....	<b>167</b>
<i>Bogdan Ciubotaru, Dan Pescaru and Doru Todinca</i>	
<b>Digital Watermarking using Karhunen-Loeve transform</b> .....	<b>171</b>
<i>Daniela Stanescu, Mircea Stratulat, Bogdan Ciubotaru, Dan Chiciudean, Razvan Cioarga and Daniel Borca</i>	
<b>Map Building and Localization of a Robot Using Omnidirectional Image Sequences</b> .....	<b>175</b>
<i>Zoltán Vámosy</i>	
<b>Model Predictive Control of the (13C) Isotope Separation Column</b> .....	<b>179</b>
<i>E.H. Dulf and Cl. Festila</i>	
<b>Automatic Parametrization of Region Finding Algorithms in Gray Images</b> .....	<b>183</b>
<i>Szabolcs Sergy'An and László Csink</i>	
<b>Improved High Dynamic Range Image Reproduction Method</b> .....	<b>187</b>
<i>András Rövid., Takeshi Hashimoto and Péter Varlaki</i>	
<b>Using Registration Algorithms for Wireless Sensor Network Node Localization</b> .....	<b>192</b>
<i>Daniela Fuiorea, Vasile Gui, Dan Pescaru and Corneliu Toma</i>	
<b>Fuzzy Control Systems based on Parametric T-Norm Function</b> .....	<b>198</b>
<i>J. Tick</i>	
<b>Image Retrieval by Shape Based on Contour Techniques ... A Comparative Study</b> .....	<b>202</b>
<i>Irina Mocanu</i>	
<b>Representing and Comparing Competences Using Agents</b> .....	<b>207</b>
<i>Alexandru Cicortas and Victoria Jordan</i>	
<b>Using Petri Nets to Model the Web Structure</b> .....	<b>213</b>
<i>Shih-Yang Yang, Po-Zung Chen and Chu-Hao Sun</i>	
<b>Implementation of an Authentication Protocol for Sending Audio-Video Information in Java</b> .....	<b>218</b>
<i>Bogdan Groza, Dorina Petrica, Simona Barbu and Mariana Bilanin</i>	
<b>Embedding Data in Video Stream using Steganography</b> .....	<b>222</b>
<i>Daniela Stanescu, Mircea Stratulat, Bogdan Ciubotaru, Dan Chiciudean, Razvan Cioarga and Mihai Micea</i>	
<b>Simulated Fault Injection for Quantum Circuits Based on Simulator Commands</b> .....	<b>226</b>
<i>Oana Boncalo, Mihai Udrescu, Lucian Prodan, Mircea Vlăduțiu and Alexandru Amăricăi</i>	

<b>About Initial Setting of a Self-Tuning Controller</b> .....	<b>232</b>
<i>Filip Ioan and Vasar Cristian</i>	
<b>Considerations regarding the Induction Generator's Self-Excitation within Energy Power Stations</b> .....	<b>238</b>
<i>Nicolae Budisan1, Ioan Filip, Octavian Prostean, Iosif Szeidert and Lucian Mihet-Popa</i>	
<b>The Modeling Process of a Human Hand Prosthesis</b> .....	<b>243</b>
<i>Doina Dragulescu and Loredana Ungureanu</i>	
<b>Energy Absorption Modelling Technique for Car Body Deformation</b> .....	<b>249</b>
<i>István Harmati, András Rövid and Péter Varlaki</i>	
<b>Performance Evaluation for Training a Distributed BackPropagation Implementation</b> .....	<b>253</b>
<i>Sorin Babii</i>	
<b>An Untimed Petri Net Model for an Automatic Transport System with Accumulation Areas</b> .....	<b>259</b>
<i>Dan Ungureanu-Anghel and Octavian Prostean</i>	