



**RECENT RESEARCHES in
MULTIMEDIA SYSTEMS, SIGNAL
PROCESSING, ROBOTICS,
CONTROL and MANUFACTURING
TECHNOLOGY**

**11th WSEAS International Conference on ROBOTICS, CONTROL
and MANUFACTURING TECHNOLOGY (ROCOM '11)
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Preface

This year the 111th WSEAS International Conference on ROBOTICS, CONTROL and MANUFACTURING TECHNOLOGY (ROCOM '11) and the 11th WSEAS International Conference on MULTIMEDIA SYSTEMS & SIGNAL PROCESSING (MUSP '11) were held in Venice, Italy, March 8-10, 2011. The conferences remain faithful to their original idea of providing a platform to discuss robotics materials, human-robot interfaces, space and underwater robots, telerobotics, cybernetics, hybrid systems, real-time control, human-machine systems and cybernetics, unmanned vehicles, mechatronics, adaptive filters, array signal processing, cyclostationary signal analysis, multidimensional systems, machine vision, image coding, real time system estimation, satellite signals processing etc. with participants from all over the world, both from academia and from industry.

Their success is reflected in the papers received, with participants coming from several countries, allowing a real multinational multicultural exchange of experiences and ideas.

The accepted papers of these conferences are published in this Book that will be indexed by ISI. Please, check it: www.worldses.org/indexes as well as in the CD-ROM Proceedings. They will be also available in the E-Library of the WSEAS. The best papers will be also promoted in many Journals for further evaluation.

Conferences such as these can only succeed as a team effort, so the Editors want to thank the International Scientific Committee and the Reviewers for their excellent work in reviewing the papers as well as their invaluable input and advice.

The Editors

Table of Contents

| | |
|--|----|
| Plenary Lecture 1: Design of Neural Predictor for Noise Analysis of Cooling System <i>Sahin Yildirim</i> | 11 |
| Path Following and Obstacle Avoidance Fuzzy Controller for Mobile Indoor Robots <i>Mousa Al-Akhras, Maha Saadeh, Emad AL Mashakbeh, Heba Saadeh</i> | 13 |
| Vision based Defect Detection on 3D Objects and Path Planning for Processing <i>Michael Weyrich, Philipp Klein, Martin Laurowski, Yongheng Wang</i> | 19 |
| A Review of Tool Electrode Designs for Sinking EDM Process <i>Rajeev Kumar Garg, Kuldeep Ojha</i> | 25 |
| A Neural Based Position Controller for an Electrohydraulic Servo System <i>Sahin Yildirim, Selcuk Erkaya, Ibrahim Uzmay, Menderes Kalkat</i> | 31 |
| Evaluation of Noise Characteristics for a Cooling System Using Neural Network <i>Selcuk Erkaya, Sahin Yildirim</i> | 39 |
| Design of A Fuzzy Logic Controller for A Plant of N-Order Based on Genetic Algorithms <i>Mohanad Alata, Mohammad Molhim, Khaled Al Masri</i> | 46 |
| Acceleration of the Speed of Tissue Characterization Algorithm for Coronary Plaque by Employing GPGPU Technique <i>Takanori Koga, Shota Furukawa, Noriaki Suetake, Eiji Uchino</i> | 52 |
| Advanced Control Methodology for Intelligent Universal Transformers based on Fuzzy Logic Controllers <i>Maryam Sadeghi, Magid Gholami</i> | 58 |
| Object-Oriented Execution and Monitoring of Industrial Control Logic for Automated Manufacturing System <i>Kwan Hee Han, Sang Hyun Choi, Jun Woo Park, Jun Woo Lee</i> | 63 |
| Introduction of a Hybrid Control Approach for Automotive Logistics <i>Bernd Scholz-Reiter, Dennis Lappe, Carmen Ruthenbeck, Christian Toonen</i> | 69 |
| Tone Quality Improvement of Bone Conduction Voice by Cepstrum-based Local Conversion Models <i>Ryosuke Kubota, Youhei Kawamura, Noriaki Suetake, Eiji Uchino</i> | 74 |
| A Study of Asymmetric ZCZ Sequence Sets <i>Hideyuki Torii, Makoto Nakamura</i> | 79 |
| Job-Shop-Systems – Continuous Modeling and Impact of External Dynamics <i>Bernd Scholz-Reiter, Christian Toonen, Dennis Lappe</i> | 87 |

| | |
|---|-----|
| Digital Watermarking Scheme Using Direct-sequence Spread Spectrum with Adaptive Voltage Control for Spread Watermark Signals | 93 |
| <i>Makoto Nakamura, Hideyuki Torii, Chihiro Aoshima</i> | |
| Stability Analysis on Independent Vector Analysis | 98 |
| <i>Takashi Itahashi, Kiyotoshi Matsuoka</i> | |
| Channel Estimation in a DMT Based Power-Line Communication System Using Sparse Bayesian Regression | 104 |
| <i>Ashraf A. Tahat, Nikolaos P. Galatsanos</i> | |
| Large Vocabulary Speech Recognition System: SPOJUS++ | 110 |
| <i>Yasuhisa Fujii, Kazumasa Yamamoto, Seiichi Nakagawa</i> | |
| Designing a Mobile Robot Used in Services Area | 119 |
| <i>Paul Ciprian Patric, Mihaita Ardeleanu, Lucia Pascale</i> | |
| Multi Class-based n-gram Language Model for NewWords Using Web Data | 125 |
| <i>Welly Naptali, Masatoshi Tsuchiya, Seiichi Nakagawa</i> | |
| Decentralized Control of Nonlinear Large Scale Systems Using Dynamic Output Feedback | 132 |
| <i>S. Akraminejad, M. R. Hojjati, K. Zare</i> | |
| The Gear Whine Noise and Vibro-Acoustic Emission of Gear-Box | 138 |
| <i>V. Niola, G. Quaremba</i> | |
| Cost Saving in an Automotive Battery Assembly Line Using Setup Time Reduction | 144 |
| <i>B. M. Deros, D. Mohamad, M. H. M. Idris, M. N. A. Rahman, J. A. Ghani, A. R. Ismail</i> | |
| Stirling Engines in Generating Heat and Electricity for Micro - CHP Systems | 149 |
| <i>Dan Scarpete, Krisztina Uzuneanu</i> | |
| Automatic Detection of Edited Parts in Inexact Transcribed Corpora Based on Alignment between Edited Transcription and Corresponding Utterance | 155 |
| <i>Kengo Ohta, Masatoshi Tsuchiya, Seiichi Nakagawa</i> | |
| Comparison of Joint Space and Task Space Integral Sliding Mode Controller Implementations for a 6DOF Parallel Robot | 163 |
| <i>Dereje Shiferaw, Anamika Jain</i> | |
| Modelling Critical Scenarios in Parallel Railroad Level Crossing Traffic Control Systems Using Statecharts | 170 |
| <i>Tso-Hsien Liao, Guo-Shing Huang, Yi-Sheng Huang</i> | |
| Authors Index | 176 |

Plenary Lecture 1

Design of Neural Predictor for Noise Analysis of Cooling System



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Abstract: In this study, a procedure of testing and evaluation on the noise quality of cooling system is presented. Both the experimental analysis of cooling system and the simulation analysis of noise parameters using Neural Network (NN) are implemented. An Intelligent Data Acquisition and a microphone are used to measure the system noise. Different types of NN are used to investigate the noise parameters. The results show that Radial Basis Neural Network (RBNN) gives superior performance for predicting the noise of cooling system.

The main purpose of this investigation is to obtain the robust and adaptive neural network predictor. The noise analysis of cooling system has been examined by using fourth types of artificial neural networks. The result obtained show that RBNN has superior prediction for adapting noise parameters of the cooling system. The structure of an RBNN is unusual in that the constitution of its hidden units is entirely different from that of its output units. RBNN with radial-basis function and fast convergence properties has also great possibility in real-time prediction and analyze noise.

Brief Biography of the Speaker: Prof. Yildirim was born in NEVSEHIR. Prof. Yildirim received his Dip. Eng. Degree and MSc Degree from Erciyes University, KAYSERI, TURKEY in Mechanical Engineering. He received his PhD degree from Cardiff University, UK. His research interests include: Artificial Neural Networks, System Dynamics and Control, Robot Control, Mechanical Vibrations, Vehicle Suspension Systems analysis and control, mobile robot design and trajectory control. He has authored or co-authored over 80 refereed journal and conference proceeding papers in the above areas. Prof. Yildirim has chaired sessions at several international conferences. He is a frequent paper reviewer for several journals, including Mechanism and Machine Theory, Journal of Sound and Vibration, Mechatronics and IEEE Industrial Electronics.

Authors Index

| | | | |
|-------------------|--------|-------------------|---------------|
| Akraminejad, S. | 132 | Mohamad, D. | 144 |
| Al Mashakbeh, E. | 13 | Molhim, M. | 46 |
| Al Masri, K. | 46 | Nakagawa, S. | 110, 125, 155 |
| Al-Akhras, M. | 13 | Nakamura, M. | 79, 93 |
| Alata, M. | 46 | Naptali, W. | 125 |
| Aoshima, C. | 93 | Niola, V. | 138 |
| Ardeleanu, M. | 119 | Ohta, K. | 155 |
| Choi, S. H. | 63 | Ojha, K. | 25 |
| Deros, B. M. | 144 | Park, J. W. | 63 |
| Erkaya, S. | 31, 39 | Pascale, L. | 119 |
| Fujii, Y. | 110 | Patic, P. C. | 119 |
| Furukawa, S. | 52 | Quaremba, G. | 138 |
| Galatsanos, N. P. | 104 | Rahman, M. N. A. | 144 |
| Garg, R. K. | 25 | Ruthenbeck, C. | 69 |
| Ghani, J. A. | 144 | Saadeh, H. | 13 |
| Gholami, M. | 58 | Saadeh, M. | 13 |
| Han, K. H. | 63 | Sadeghi, M. | 58 |
| Hojjati, M. R. | 132 | Scarpete, D. | 149 |
| Huang, G.-S. | 170 | Scholz-Reiter, B. | 69, 87 |
| Huang, Y.-S. | 170 | Shiferaw, D. | 163 |
| Idris, M. H. M. | 144 | Suetake, N. | 52, 74 |
| Ismail, A. R. | 144 | Tahat, A. A. | 104 |
| Itahashi, T. | 98 | Toonen, C. | 69, 87 |
| Jain, A. | 163 | Torii, H. | 79, 93 |
| Kalkat, M. | 31 | Tsuchiya, M. | 125, 155 |
| Kawamura, Y. | 74 | Uchino, E. | 52, 74 |
| Klein, P. | 19 | Uzmay, I. | 31 |
| Koga, T. | 52 | Uzuneanu, K. | 149 |
| Kubota, R. | 74 | Wang, Y. | 19 |
| Lappe, D. | 69, 87 | Weyrich, M. | 19 |
| Laurowski, M. | 19 | Yamamoto, K. | 110 |
| Lee, J. W. | 63 | Yildirim, S. | 31, 39 |
| Liao, T.-H. | 170 | Zare, K. | 132 |
| Matsuoka, K. | 98 | | |