

CMS'07 Computer Methods and Systems

Krakow, Poland, November 21-23, 2007

Plenary lectures

Computers and Images: from Filtering and other Processing Procedures, through Feature Analysis and Pattern Recognition, up to the Automatic Understanding of the Merit Content

Ryszard Tadeusiewicz, Marek Ogiela

Continuation method in robotics

Krzysztof Tchoń

Analytical and computational intelligence methods in diagnostics of processes and systems

Józef Korbicz

The role and use of positive feedbacks in analysis of biological models on molecular level

Andrzej Świerniak

Real-world modeling – tools, methods, applications and the future of computational sciences

Witold Dzwiniel

Regular sessions

Knowledge Engineering - Logic, Expert Systems and Databases

A Simple Tableau-based Parallel Reasoning System for First-Order Logic

Adam Meissner

Designing of Medical Rule-Based Systems from Heterogeneous Data

Magdalena Szymkowiak, Beata Jankowska, Krzysztof Zwierzyński

The temporal database about tasks of programs for analysis of distributed system

Mieczysław Drabowski, Krzysztof Czajkowski

Knowledge Engineering - Knowledge Representation and Design of Rule-Based Systems

Conceptual Modeling of Business Rules and Processes with the XTT Method

Grzegorz J. Nalepa, Maria Antonina Mach

Visual Design Tools for XTT-based Rulebases

Grzegorz J. Nalepa

XML-based Knowledge Translation Methods for XTT-based Expert Systems

Grzegorz J. Nalepa, Igor Wojnicki

Knowledge Engineering - Computer Aided Systems, Grid Computing and Natural Language

The approach to grid computing in the industries

Jolanta Joszczuk-Januszevska

Deprefixation algorithms of Ispell dictionary for Polish language

Piotr Baran, Krzysztof Rzecki, Jacek Mościński

Computer-aided System for Results Analysis of Validation of Micro-Scale CFD Models

Krzysztof Brzozowski, Andrzej P. Nowak

Knowledge Engineering - Route Planning, AI in Management and Rule-Based Systems

A Multi-Agent Implementation of an Automated Planner for Dynamic Environments

Sebastian Ernst

The Implementation of Artificial Intelligence Methods within Supply Chain Management. Introductory Study Project

Krzysztof Wilk

An Improved Knowledge Representation Language for XTT. Extended Tabular Graphs with Variables, Constraints and Control

Antoni Ligęza

Knowledge Engineering - Technical Diagnosis Knowledge Representation and Inference Models

Diagnosis of Single and Multiple Faults. An Analysis of Algebraic Approach Based on Diagnostic Matrix and Rule-Based Interpretations

Antoni Ligęza, Jan Maciej Kościelny

Diagnosis of Single and Multiple Faults. A Combination of Graph-Based and Algebraic Approach

Antoni Ligęza, Jan Maciej Kościelny

Conceptual Graphs for Reasoning on Changes in Enterprise's Environment

Maria Antonina Mach

Control applications

MPC Microcontroller Applied to Antilock Brake System

Maciej Rosół

Rapid prototyping of servo controllers in RTAI-Lab

Grzegorz Skiba, Tomasz Żabiński, Krzysztof Wiktorowicz

Automatic generation of Active Magnetic Bearing geometry with COMSOL Multiphysics

Adam Piłat

Computing technology

An algorithm of unstructured volume grid generation with mesh size function

Jan Kucwaj

Modeling of MEMS piezoresistive sensor using CoventorWare software

Arkadiusz Malinowski, Krzysztof Domański, Piotr Grabiec, Paweł Janus

Finite element simulation of deformation of polycrystals accounting for the orientation of grains

Lechosław Trębacz, Monika Pernach, Łukasz Madej, Wojciech Wajda, Maciej Pietrzyk, Henryk Paul

Numerical optimization

Construction of spline models for optimal control computations - numerical aspects

Janusz Miller, Łukasz Sztangret, Łukasz Wójcik

Branch & Bound and Genetic Methods for Synthesis and Control in the Complex of Operations and Resources

Mieczysław Drabowski

Software Engineering

Real-Time Application Interface and Xenomai modified GNU/Linux real-time operating systems dedicated to control

Marcin Piątek

State Machine Translator from the UML Model to Implementation in C Language for "Quantum Platform Nano"

Piotr Romaniuk

Neural networks

Comparison of cellular automaton and cellular neural networks in a robot vision system

Wojciech Jamrozik, Anna Timofiejczuk

Adaptive neural controller for the task of trajectory tracking of the 3DOF manipulator

Dariusz Marchewka, Tomasz Żabiński

Neural network for robot control in real-time

Rafał Pajda, Tomasz Żabiński

MATLAB environment

Prototyping of Plant Identification System Using TI DSP Evaluation Board and MATLAB/Simulink Software

Tomasz Kolasa, Andrzej Dębowski

Software application based on Matlab system for analysis of ICs fabrication dispersion

Arkadiusz Malinowski, Daniel Tomaszewski, Andrzej Jakubowski

Simulation of IS-95A digital cellular CDMA radio interface in Matlab environment

Antoni Szczepański, Mariusz Trojnar

Stochastic and Fuzzy Logic modeling

Comparison of classification accuracy performed with Hidden Markov Model based classifier and Support Vector Machine classifier applied to microarray gene expression data

Patryk Walawender, Łukasz Ćmielowski

Construction of fuzzy models with clonal selection

Bogumiła Mrozek

Computational applications in engineering

Application of symbolic computational methods to thin shell problems in MATSHELL – a MATLAB package for computing thin shells

Tham Boi Chau, Cao Duc Thiep, Marek L. Szwabowicz

Numerical estimation of the stresses in main parts of the new generation subcalibre projectile during firing

Mariusz Magier

MATLAB implementation of the boundary conditions for the linear problem of thin shells

Marek L. Szwabowicz, Cao Duc Thiep, Tham Boi Chau

Industrial applications

Problems of 3D reconstruction methods in visual inspection of surfaces of abrasive tools

Artur Bernat, Wojciech Kacalak

Problems of acquiring of the parameters of cutting surface of abrasive tools, used in grinding of ceramics

Artur Bernat, Wojciech Kacalak

Image Processing

Preprocessing and postprocessing in process of colour image segmentation

Henryk Palus

A parallel system for non-deterministic ray tracing

Michał Radziszewski, Witold Alda

Detection of anisotropy of friction surface images

Zbigniew Rudnicki, Marek Mruk

Hardware architecture for automatic color calibration

Mirosław Jabłoński

Mathematical modeling

Implementation of boundary conditions in differential quadrature method and its influence on stability

Artur Krowiak

Analysis of nonlinear systems on example of Bethenod's system

Paweł Mitkowski

Numerical Approach to the Null Controllability of Parabolic Systems with Compact Constraints

Jerzy Respondek

Applications in electronics

Design and analysis of circuits for echo and reverberation simulation

Przemysław Maćkowiak

Control of power electronics devices using time delayed feedback

Norbert Mielczarek, Ryszard Porada

Electrical circuits simulation with Simplorer SV program

Antoni Szczepański, Mariusz Trojnar.

Computer graphics

Image orientation dependent segmentation — problem analysis and solution proposition on example of region merging segmentation method

Artur Bal

Fractal Solid Bodies

Wiesław Kotarski, Agnieszka Lisowska

Superfractals in Graphical Object Modeling

Wiesław Kotarski, Agnieszka Lisowska, R. Domider

Computing architectures

An application of Support Vector Machines to significant genes detection in micro-arrays genes expressions data

Łukasz Ćmielowski, Patryk Walawender

Data Dispatcher for interactive and data-streaming applications using Grid environment

Jan Pieczykolan, Lukasz Dutka, Krzysztof Korcyl, Jacek Kitowski

Dynamic Task Dividing in the Parallel Implementation of Algorithm for Solving Certain Nonlinear Diophantine Equations

Jerzy Respondek

Economic modeling

Money Laundering Conceptual Modeling - the Ontological Perspective

Jolanta Cybulka, Jacek Martinek, Czesław Jędrzejek

The comparison of forecast errors of GARCH models and the m smallest k-simplexes method of selected types of time series

Jacek Szandula

Financial analysis using MATLAB/SIMULINK

Aleksander Ostanin, Jerzy Wasiluk

System identification

Observer design for variable moment of inertia system

Jerzy Baranowski, Michał Ganobis, Wojciech Mitkowski

Continuous state estimation in water tank system

Jerzy Baranowski, Andrzej Tutaj

Advanced modeling

Digital representation of microstructure

Grzegorz Cybulka, Paweł Jamrozik, Tomasz Wejrzanowski, Łukasz Rauch, Łukasz Madej

A novel approach to modeling and co-simulation of integrated nanosystems

Arkadiusz Malinowski, Paweł Janus, T. Bieniek, Piotr Grabiec, A. Kociubiński, G. Schröpfer

Modeling surface tension of incompressible fluids by means of a modified SPH method

Paweł Wróblewski, Krzysztof Boryczko, Mariusz Kopeć

Management and decision support systems

Application of heuristic algorithm in a problem of tasks scheduling in a group of parallel machines

Zbigniew Buchalski

Knowledge management in the expert system for the decision-making process assist

Zbigniew Buchalski

The conceptual and implementation model of document based workflow management system

Aleksander Wocial

Several aspects in modeling of workflow management system

Aleksander Wocial
