# CMS'09 Computer Methods and Systems

## *Thursday 26.11.2009*

**8.30 Registration**

**9.30 Conference opening**

**9.45–11.00 Workshop on Knowledge Engineering and Intelligent Systems** **room A**

**session: KEIS-T1**

Architectures of Neural Networks applied for LVCSR Language Modeling
*Leszek Gajęcki, Ryszard Tadeusiewicz*

Development of quasi-optimal learning models for classification of melanocytic skin lesions – a constructive induction approach
*Wiesław Paja, Mariusz Wrzesień*

Image Compression using Fast Transform Based Neural Network Architecture
*Kamil Stokfiszewski, Piotr S. Szczepaniak*

**9.45–11.00 Workshop on Mathematical Modeling, Control and Optimization** **room B**

**session: MMCO-T1**

Selection criteria of forecast pollution concentrations using collateral information
*Diana Domańska, Marek Wojtylak*

Polish Infrastructure for Supporting Computational Science in the European Research Space
*Jacek Kitowski, Kazimierz Wiatr, Marian Bubak, Michał Turała, Łukasz Dutka, Zofia Mosurska*

Parallel processors scheduling with special type of programs processing time function
*Zbigniew Buchalski*

**9.45–11.00 Workshop on Scientific and Engineering Computing** **room C**

**session: SEC-T1**

Quality of software applied in engineering and its evolutional improvements
*Barbara Begier, Jacek Wdowicki*

KM and KHM clustering techniques: computing acceleration by multithread programming
*Mariusz Frąckiewicz, Henryk Palus*

Model-Driven Development for scientific computing
*Andrzej Daniluk*

***11.00-11.20 coffee break***

**11.20–13.00 Workshop on Knowledge Engineering and Intelligent Systems** **room A**

**session KEIS-T2**

Information Structures of Police Investigation Management System
*Jacek Martinek*

Algorithm for Designing Production Rules from Data Stored in Registers of Clinical Trials
*Beata Jankowska, Magdalena Szymkowiak*

Methodology of Predicting the Future Condition of Small and Medium Enterprises
*Andrzej Burda, Zdzisław S. Hippe*

Uncertainty in Bayesian Networks
*Tomasz Ignac, Uli Sorger*

**11.20–13.00** **Workshop on Mathematical Modeling, Control and Optimization** **room B**
**session: MMCO-T2**

Unknown input matrix estimation via evolutionary search with soft selection algorithm
*Rafał Józefowicz, Marcin Witczak, Józef Korbicz*

Application of the genetic algorithms and distributed computing in task of the reduction of vibrations of a satellite
*Krzysztof Augustynek, Kornel Warwas, Andrzej Polański*

Neural estimator of photovoltaic cell parameters
*Tomasz Ocetkiewicz*

Optimization using the clonal selection and chosen evolutionary algorithms
*Bogumiła Mrozek*

**11.20–13.00** **Workshop on Scientific and Engineering Computing** **room C**
**session: SEC-T2**

Concept of Virtual Organization Paradigm for Holistic Rehabilitation of Patients after Stroke
*Rafał Wcisło, Jacek Kitowski, Renata Slota, Janusz Otfinowski*

Design of neural network based speed estimator in an AC drive using Matlab-Simulink
*Rafał Kmieciak, Lech M. Grzesiak*

Real-time Computer Simulator of Hydraulic Excavator
*Szymon Engel, Witold Alda, Krzysztof Boryczko*

Application of the Matlab SLPS module in research into methods of current inverter control
*Norbert Mielczarek, Ryszard Porada*

***13.00-14.00 lunch***

**14.00–15.40** **Workshop on Knowledge Engineering and Intelligent Systems** **room A**
**session KEIS-T3**

Application Ontology-based Crime Model for a Selected Economic Crime
*Czesław Jędrzejek, Jolanta Cybulka, Jarosław Bąk*

Introducing Parsimonious Rules to a Parallel Reasoning System for the *ALC* Description Logic
*Adam Meissner*

Rule Representation for the SemanticWeb – Overview of Approaches
*Weronika T. Furmańska*

Relational database as an ontology framework for business rules engine
*Andrzej Macioł*

**14.00–15.40** **Workshop on Mathematical Modeling, Control and Optimization** **room B**
**session: MMCO-T3**

Modeling and Control of High-Temperature Heat Exchanger
*Stepan Ozana, Martin Pies.*

Stabilization of nonlinear RLC ladder network
*Paweł Skruch*

Using of vectorization to simulate in Simulink fan and series motor aggregate
*Andrzej Kułakowski, Mirosław Wciślik*

City Traffic Modeling and Optimization Using Agent Environment
*Mateusz Bukowski, Tomasz Zawada, Jarosław Koźlak*

**14.00–15.40** **Workshop on Scientific and Engineering Computing** **room C**
**session: SEC-T3**

Implementation of modern control algorithms in PLCs
*Krzysztof Pietrusewicz, Paweł Dworak*

Semi-automatic design and code generation for FPAA devices
*Adam Piłat*

Rapid control prototyping system with industrial embedded PC controller
*Andrzej Bożek, Tomasz Żabiński, Krzysztof Wiktorowicz*

Programmable soft controller with data acquisition cards
*Jan Sadolewski*

***15.40-16.00*** ***coffee break***

**16.00–17.40** **Workshop on Knowledge Engineering and Intelligent Systems** **room A**
**session KEIS-T4**

MOF-based Metamodeling for the XTT Knowledge Representation
*Krzysztof Kluza, Grzegorz Nalepa*

Extensible Design and Verification Environment for XTT Rule Bases
*Krzysztof Kaczor, Grzegorz J. Nalepa*

Proposal of a Formal Verification Framework for the XTT2 Rule Bases
*Agata Ligęza, Grzegorz J. Nalepa*

Haskell approach to rule-based systems analysis
*Marcin Szpyrka*

**16.00–17.40** **Workshop on Mathematical Modeling, Control and Optimization** **room B**
**session: MMCO-T4**

Determination of battery parameters during vehicle drive cycle
*Paweł Skruch, Jerzy Baranowski*

The test bed for simulation of Earth Magnetic Field
*Paweł Zagórski, Paweł Piątek*

The rotational speed reconstruction system for the universal alternating current motor
*Andrzej Tutaj, Paweł Piątek, Adam Piłat, Dariusz Marchewka, Mariusz Pauluk*

Development environment for the walking robot application
*Marcin Piątek, Paweł Piątek*

**16.00–18.05** **Workshop on Scientific and Engineering Computing** **room C**
**session: SEC-T4**

Application of Contextual Potential Active Contours to Heart Ventricle Shape Detection
*Stanisław Walczak, Arkadiusz Tomczyk, Piotr Szczepaniak*

Image transformations using fractals and superfractals
*Rafał Domider, Wiesław Kotarski*

Fractal rendering of arbitrary Catmull-Clark surfaces
*Krzysztof Gdawiec, Wiesław Kotarski, Agnieszka Lisowska*

Fractal based progressive representation of 2D contours
*Wiesław Kotarski, Krzysztof Gdawiec, Grzegorz T. Machnik*

Multi-focus image fusion algorithms using Matlab
*Agnieszka Miśkowiec, Witold Alda*

***19.00*** ***Conference dinner, "Pod Roza Hotel", Krakow, ul. Floriańska 14***

## *Friday 27.11.2009*

**8.30–10.00** **Plenary session**

Personalization in Learning by Knowledge Engineering with Didactic Knowledge
*Rainer Knauf, Yoshitaka Sakurai, Setsuo Tsuruta*

Numerical Methods for Embedded Optimisation and their Implementation within the ACADO Toolkit
*Hans Joachim Ferreau, Boris Houska, Tom Kraus, Moritz Diehl*

**10.00–11.15** **Workshop on Knowledge Engineering and Intelligent Systems** **room A**
**session KEIS-F1A**

Blocks That Think Towards Generic Agents for Digital Games
*Swen Gaudl, Denise Lengyel*

Why Storyboarding, Why Not Planning?
*Klaus P. Jantke*

Knowledge Games & Knowledge Engineering
*Klaus P. Jantke, Swen Gaudl, Anja Hawlitschek, Imke Hoppe, Denise Lengyel*

**10.00–11.15** **Workshop on Knowledge Engineering and Intelligent Systems** **room B**
**Session KEIS-F1B**

Control and Monitoring System for Intelligent Manufacturing – Hardware and Communication Software Structure
*Tomasz Żabiński, Tomasz Mączka, Bartosz Jędrzejec*

Two Methods of Agent Strategy Generation by Rule Induction
*Bartłomiej Śnieżyński*

Knowledge-based Methods for QA/QC Procedures: Maintenance and Repair of Nuclear Instruments Portal
*Bartlomiej Śnieżyński, Roman Krasowski*

**10.00–11.15** **Workshop on Scientific and Engineering Computing** **room C**
**session: SEC-F1**

The Improvement of the Gauss Method Accuracy
*Roman Dmytryszyn*

Development of Maple package for differential quadrature method
*Artur Krowiak*

Mesh adaptations for accurate FEM modelling of flows
*Kazimierz Michalik, Piotr Macioł, Krzysztof Banaś*

***11.15-11.30 coffee break***

**11.30–13.10** **Workshop on Knowledge Engineering and Intelligent Systems** **room A**
**session KEIS-F2A**

Who are the Spammers? Understandable Local Patterns for Concept Description
*Martin Atzmueller, Florian Lemmerich, Beate Krause, Andreas Hotho*

A Context-Based Reasoning Approach to Learner Modeling
*Andreas Coblenz, Jun Fujima, Christian Woelfert*

Continuous Knowledge Engineering with SemanticWikis
*Joachim Baumeister, Jochen Reutelshoefer, Frank Puppe*

Semantic Integration of XML Data in P2P Environment
*Tadeusz Pankowski, Jerzy Bartoszek, Grażyna Brzykcy, Jolanta Cybulka, Beata Jankowska, Adam Meissner, Magdalena Niwińska*

**11.30–13.10** **Workshop on Knowledge Engineering and Intelligent Systems** **room B**
**session:KEIS-F2B**

Core, relative reducts and database
*Krzysztof Czajkowski, Mieczysław Drabowski*

GIS and QBIC in database of historical monuments
*Krzysztof Czajkowski, Mieczysław Drabowski*

The grid computing techniques supporting green computing
*Jolanta Joszczuk-Januszewska*

Data migration and instances allocation in database grid
*Mieczysław Drabowski, Krzysztof Czajkowski*

**11.30–13.10** **Workshop on Scientific and Engineering Computing** **room C**
**session: SEC-F2**

Co-simulation Matlab-Sentaurus for LWR modeling in Double Gate Field Effect Transistors
*Arkadiusz Malinowski, Makoto Sekine, Masaru Hori, Daniel Tomaszewski, Andrzej Jakubowski*

Development of the cellular automata framework for modelling of material microstructures
*Łukasz Rauch, Łukasz Madej, Patryk Spytkowski*

Computer program for the simulation of physical structures based on the joint co-ordinates and homogenous transformations
*Kornel Warwas, Szymon Tengler*

The optimization of heat treatment of steel using neural networks
*Emilia Stańczyk-Wołowiec*

***13.10-14.15 lunch***

**14.15–15.05** **Workshop on Knowledge Engineering and Intelligent Systems** **room A**
**session:KEIS-F3A**

About dimensions and measures of knowledge granularity
*Mieczysław Owoc, Maria Mach*

A Knowledge-Based Approach to Modelling Planning Domains with Uncertainty for Resource Bounded Agents
*Sławomir Nowaczyk*

**14.15–15.55** **Workshop on Mathematical Modeling, Control and Optimization** **room B**
**session: MMCO-F1**

Metallic materials during processing modelled as dynamic and/or stochastic object
*Łukasz Madej, Maciej Pietrzyk*

LQ based glucose stabilisation for Intensive Care Unit patients
*Waldemar Bauer, Paweł Płuciennik, Jerzy Baranowski, Wojciech Mitkowski*

Control of cancer immunotherapy: the LQ approach
*Agnieszka Nowak, Anna Obrączka, Jerzy Baranowski, Wojciech Mitkowski*

Application of the Collocation Method to the Monotone Structural Evolution Algorithm for Bang-bang Optimal Control Problems
*Janusz Miller*

**14.15–16.20** **Workshop on Scientific and Engineering Computing** **room C**

**session: SEC-F3**

Using Positional Information in Modelling Horns, Beaks and Other Natural Forms
*Cezary Stępień.*

Efficient algorithm for real-time synthesis of natural surfaces.
*Bartłomiej Burczyński*

Initialization methods for clustering in colour quantization techniques
*Henryk Palus, Mariusz Frackiewicz*

Some aspects of colorimetric calibration and profiling of digital camera
*Artur Bal, Andrzej Kordecki*

Semantic Analysis of "melanoma malignum" Images Using Support Vector Machine
*Weronika Piątkowska, Karol Przystalski, Jerzy Martyna*