



MedDecSup 2011

International Workshop on
Next Generation Intelligent
Medical Decision Support Systems

Tg. Mureș, Romania,
September 18, 19, 2011



Technical University
Sofia



Petru Maior
University
Târgu-Mureș

MedDecSup 2011 is organized under the frame of the bilateral Romanian-Bulgarian cooperation research project with a duration of two years and bears the title "*Electronic Health Records for the Next Generation Medical Decision Support in Romanian and Bulgarian National Healthcare Systems*" abbreviated as: *NextGenElectroMedSupport*, financed by the **National Authority for Scientific Research (ANCS)**, Romania and the **Ministry of Education, Youth and Science**, Bulgaria.

Programme

Honorary Chair
Professor Lotfi Zadeh
University of California, Berkeley

Principal Scientific Organizers and General Chairs

Barna Iantovics
Petru Maior University
Tg. Mures, Romania

Roumen Kountchev
Technical University
Sofia, Bulgaria

Conference Chair from Petru Maior University

Calin Enachescu
Petru Maior University, Tg. Mures, Romania

Conference Chairs

- **Vasil Hadjidekov, Medical University, Bulgaria**
- **Ladislav Hluchý, Institute of Informatics, Slovak Academy of Sciences, Bratislava, Slovakia**

Conference Co-Chairs

- **Rodica-Mariana Ion, Valahia University, Targoviste, Romania**
- **Constantin-Bala Zamfirescu, Lucian Blaga University, Sibiu, Romania**
- **Matthias Dehmer, Institute for Bioinformatics and Translational Research, Tyrol, Austria**

Scientific Committee

- Gheorghe Paun, Romanian Academy, Bucharest, Romania
- Cyrille Bertelle, Le Havre University, France
- Ronald R. Yager, Machine Intelligence Institute, New Rochelle, USA
- Roumen Kountchev, Technical University of Sofia, Bulgaria
- Rodica-Mariana Ion, Valahia University, Targoviste, Romania
- Florentin Smarandache, University of New Mexico, USA
- Ladislav Hluchý, Institute of Informatics, Slovak Academy of Sciences, Bratislava, Slovakia
- Witold Pedrycz, University of Edmonton, Canada
- Dana Petcu, West University of Timisoara, Romania
- M.A. Aziz-Alaoui, Le Havre University, France
- Vasil Hadjidekov, Medical University, Bulgaria
- Abdel-Badeeh M. Salem, Ain Shams University, Cairo-Egypt
- Marius Marusteri, University of Medicine and Pharmacy, Tg. Mures, Romania
- Kamisetty R. Rao, University of Texas at Arlington, USA
- Antoaneta Popova, Technical University of Sofia, Bulgaria
- Michel Cotsaftis, ECE, Paris, France
- Ioan Dzitac, "Aurel Vlaicu" University, Arad, Romania
- Ventzeslav Valev, Bulgarian Academy of Sciences, Bulgaria
- I.C. Baianu, University of Illinois at Urbana, USA
- Dan Dumitrescu, Babes-Bolyai, University of Cluj-Napoca, Romania
- Kazumi Nakamatsu, University of Hyogo, Japan
- Horia F. Pop, Babes-Bolyai University, Cluj-Napoca, Romania

- Barna Iantovics, Petru Maior University, Tg. Mures, Romania
- Constantin-Bala Zamfirescu, Lucian Blaga University, Sibiu, Romania
- Adina Magda Florea, University "Politehnica" of Bucharest
- Marius Balas, Aurel Vlaicu University, Romania
- Viorel Negru, West University of Timisoara, Romania
- Matthias Dehmer, Institute for Bioinformatics and Translational Research, Tyrol, Austria
- Calin Enachescu, Petru Maior University, Tg. Mures, Romania
- Mihai Talmaciu, Vasile Alecsandri University, Bacau, Romania
- James Glazebrook, Eastern Illinois University, Illinois, USA
- Dumitru Radoiu, Petru Maior University, Tg. Mures, Romania
- Angel Garrido, Facultad de Ciencias, UNED, Madrid, Spain
- Gheorghe Cosmin Silaghi, Babes-Bolyai University of Cluj-Napoca, Romania
- Liviu Moldovan Petru Maior University, Tg. Mures, Romania
- Alexander Bekiarsky, Technical University of Sofia, Bulgaria
- Frank Emmert-Streib, Queen's University Belfast, UK
- Imre Benedek, University of Medicine and Pharmacy, Tg. Mures, Romania
- Laszlo Kovacs, University of Miskolc, Hungary
- Elena Nechita, Vasile Alecsandri University, Bacau, Romania
- Giulia Rotundo, University of Tuscia, Italy
- Teodora Benedek, University of Medicine and Pharmacy, Tg. Mures, Romania
- Valentina Emilia Balas, Aurel Vlaicu University, Romania
- Kenneth Revett, University of Westminster, UK
- Luminita Duta, Valahia University of Targoviste, Romania
- Florin Nichita, "Simion Stoilow" Institute of the Romanian Academy, Romania
- Gabriela Czibula, Babes-Bolyai University, Cluj-Napoca, Romania
- Danko Georgiev, Kanazawa University, Kanazawa, Japan
- Sabin-Corneliu Buraga, Alexandru Ioan Cuza University, Iasi, Romania
- Bogdan Patrut, Vasile Alecsandri University, Bacau, Romania
- Sugata Sanyal, Tata Institute of Fundamental Research, Mumbai, India

Linguistic Reviewer

Bianca - Oana Han, Petru Maior University, Tg. Mures, Romania

Organizing Committee

- Cornel Sigmirean, Petru Maior University, Tg. Mures, Romania
- Dumitru Radoiu, Petru Maior University, Tg. Mures, Romania

- Adrian Gligor, Petru Maior University, Romania
- Camelia Ilies, Petru Maior University, Romania
- Marius Muji, Petru Maior University, Romania
- Bela Finta, Petru Maior University of Targu Mures, Romania
- Calin-Adrian Comes, Petru Maior University, Tg. Mures, Romania
- Simion Costea, Petru Maior University, Tg. Mures, Romania
- Ioan Bircea, Petru Maior University, Tg. Mures, Romania
- Bogdan Crainicu, Petru Maior University, Tg. Mures, Romania
- Bradut Vasile Bolos, Petru Maior University, Tg. Mures, Romania
- Anca Munteanu, Petru Maior University, Tg. Mures, Romania
- Ion Cozac, Petru Maior University, Tg. Mures, Romania
- Mona Cristescu, Petru Maior University, Tg. Mures, Romania
- Daniel Stefan, Petru Maior University, Tg. Mures, Romania
- Cristian Lako, Petru Maior University, Tg. Mures, Romania

External reviewers

- Piroaska Haller, Petru Maior University, Romania
- Adrian Gligor, Petru Maior University, Romania
- Rolly Seth, Young India Fellowship (in collaboration with University of Pennsylvania), India
- Sandor Szilagyi, Sapientia University, Romania
- Marius Muji, Petru Maior University, Romania
- Bela Finta, Petru Maior University of Targu Mures, Romania
- Genge Bela, Joint Research Centre, European Commission, Italy
- Sandor Tihamer Brassai, Sapientia University, Romania
- Eleonora Mircia, University of Medicine and Pharmacy, Tg. Mures, Romania
- Calin-Adrian Comes, Petru Maior University, Tg. Mures, Romania
- Ioan Bircea, Petru Maior University, Tg. Mures, Romania
- Horatiu Grif, Petru Maior University, Tg. Mures, Romania
- Ion Cozac, Petru Maior University, Tg. Mures, Romania
- Bradut Vasile Bolos, Petru Maior University, Tg. Mures, Romania
- Bogdan Crainicu, Petru Maior University, Tg. Mures, Romania

Section: Advances in Basic and Clinical Nanomedicine

Organizers:

Rodica-Mariana Ion, Roumen Kountchev, Barna Iantovics

Scientific Committee

- Jackie Y. Ying, Institute of Bioengineering and Nanotechnology, Singapore
- Dusanka Janezic, National Institute of Chemistry, Ljubljana, Slovenia
- Rodica-Mariana Ion, Valahia University, Targoviste, Romania
- Roumen Kountchev, Technical University of Sofia, Bulgaria
- Winfried Lamersdorf, University of Hamburg, Germany
- Mircea Buruian, University of Medicine and Pharmacy, Tg. Mures, Romania
- Marius Marusteri, University of Medicine and Pharmacy, Tg. Mures, Romania
- Barna Iantovics, Petru Maior University, Tg. Mures, Romania
- Vladimir Bacarea, University of Medicine and Pharmacy, Tg. Mures, Romania

Programme

18 September 2011

14-16 Registration of the participants

16.00 – 17.50 Section 1

17.50 – 18.20 Coffee break

18.20 – 19.35 Section 2

18.20 – 20 Section 3

18.20 – 20 Section 4

18.20 – 20 Section 5

18.20 – 19.35 Section 6

18.20 – 19.35 Section 7

20 – 21.30 Workshop diner

19 September 2011

10 – 11.50 Section 8

11.50 – 12.10 Coffee Break

12.10 – 13.50 Section 9

12.10 – 14.15 Section 10

14.15 – 15 – Workshop conclusions

15 – 16.30 Workshop lunch

16.30 – 18 City visit

Keynote Speakers

Professor Dr. Mihai Nadin

University of Texas at Dallas

Ashbel Smith University Professor

Director, Institute for Research in Anticipatory Systems

**Distinguished Fellow, Hanse Wissenschaftskolleg/Institute
for Advanced Study, Delmenhorst, Germany**

Professor Dr. Winfried Lamersdorf

Head of Distributed Systems (VSIS)

Department of Informatics, University of Hamburg

Germany

Associate Professor Dr. László Kovács

University of Miskolc, Hungary

18 September 2011

14-16 Registration of the participants

Room: R 21

Section 1 – Central Building Room Aula Magna

16.00 - 16.20 Workshop Opening

Moderator:

László Kovács, University of Miskolc, Hungary

16.20 - 17.20

**Keynote Speaker: Prof. Winfried Lamersdorf, University of Hamburg,
Germany**

Talk: *Software Solutions for Scheduling Problems in Health Applications with
Agent Technology*

17.20 - 17.50

**Keynote Speaker: Associate Professor László Kovács, University of Miskolc,
Hungary**

Talk: *Generating sample points in general metric Space*

17.50 – 18.20 Coffee break

Section 2 – Central Building Room Aula Magna

Moderator:

Winfried Lamersdorf, University of Hamburg, Germany

18.20 – 18.45

Amr Elbasiony and Haim Levkowitz

Talk: Scan Converting OCT images using Fourier Analysis

18.45 – 19.10

Wieslaw Wajs and Hubert Wojtowicz

Talk: Medical Decision Support System Using Pattern Recognition Methods for Assessment of Dermatoglyphic Indices and Diagnosis of Down's Syndrome

19.10 – 19.35

George Isoc, Tudor Isoc and Dorin Isoc

Talk: Computer-aided diagnosis technique and system on given practice data base

20 – 21.30 Workshop dinner

Section 3 – Room C18

Moderator:

I. C. Baianu, University of Illinois at Urbana, USA

Horatiu Grif, Petru Maior University, Tg. Mures, Romania

18.20 – 18.45

V. Prisecaru and I. C. Baianu

Talk: Signalling Pathways in Cancer Cells and Clinical Trials in Cancer Pharmacogenomics

18.45 – 19.10

I.C. Baianu

Talk: Single Molecule Detection of Nanostructures involved in the Initiation of Neoplasm and Single Cancer Cells

19.10 – 19.35

J. F. Glazebrook, and I.C. Baianu

Talk: Biogroupoids and Neurogroupoid Network Topology in Biology and Medicine

19.35 – 20

Eleonora Mircia, Teodora Dalila Balaci and Hancu Gabriel

Talk: Polymeric materials with application in nanotechnology

20 – 21.30 Workshop dinner

Section 4 Room C19

Moderators:

Gabriela Czibula, Babes-Bolyai University, Cluj-Napoca, Romania
Valentina Emilia Balas, Aurel Vlaicu University, Romania

18.20 – 18.45

Gabriela Czibula, Maria-Iuliana Bocicor and Istvan Gergely Czibula

Talk: *Promoter Gene Sequences Classification Using Relational Association Rules*

18.45 – 19.10

Ahmad Azar, Valentina Emilia Balas and Teodora Olariu

Talk: *Classification of EEG-Based Brain-Computer Interfaces*

19.10 – 19.35

Ahmet Yardimci

Talk: *Implementation of ASK RF Telemedicine System for evaluated physiological signals*

19.35 – 20

Reyhaneh Astaneh

Talk: *General concepts of nanobased in nanobiotechnology field Nanomedicine*

20 – 21.30 Workshop dinner

Section 5 – Room C15

Poster presentations 18.20 – 20

Mahsa Karimi, Parvin Zakeri, Hadi Valizadeh and Fatemeh Majidpour

Enhancement of clarithromycin intestinal permeability using the its nanoparticles Nanomedicine

Sanda Boca, Monica Potara, Ana-Maria Gabudean, Patrice Baldeck and Simion Astilean

Plasmonic Nanoparticles as Effective Imaging Probes and Hyperthermia Agents in Cancer Therapy

Reyhaneh Astaneh and Afsaneh Lavasanifar

Preparation and characterization of amiodarone nanoparticles: Invitro and Invivo study

George Isoc and Dorin Isoc

Preparing the medical vocabulary to build knowledge bases for intelligent systems in medicine

20 - 21.30 Workshop dinner

Section 6 – Room C13

Moderators:

Mihai Talmaciu, Vasile Alecsandri University, Bacau, Romania

Elena Nechita, Vasile Alecsandri University, Bacau, Romania

18.20 – 18.45

Mihai Talmaciu

Talk: A Recognition Algorithm And Some Optimization Problems On Weakly Quasi-Threshold Graphs

18.45 – 19.10

Ioan Ispas

Talk: Recognition vs Detection. Certain limitations in modeling image recognition problem

19.10 – 19.35

Elena Nechita

Talk: Teaching for Long-Term Memory

20 - 21.30 Workshop dinner

Section 7 – Room C14

Moderators:

Marius Balas, Vasile Alecsandri University, Bacau, Romania

Adrian Gligor, Petru Maior University of Tg. Mures, Romania

18.20 – 18.45

Anca Munteanu

Talk: Multicriterial decision techniques in evaluating organizational performance

18.45 – 19.10

Marius Balas

Talk: Arguments for a New Generation of Medical Equipment Based on FPGA

19.10 – 19.35

Bradut Vasile Bolos, Mihaela-Daciana Bolos, Adrian Gligor

Talk: *Connecting financial issues with treatment options for intelligent decisions*

20 - 21.30 Workshop dinner

19 September 2011

Section 8 – Central Building – Room Aula Magna

Moderator:

Winfried Lamersdorf, University of Hamburg, Germany

Roumen Kountchev, Technical University of Sofia, Bulgaria

10 - 10.45

Keynote Speaker: Prof. Mihai Nadin, University of Texas at Dallas, USA

Talk: *Anticipation Scope and Anticipatory Profile*

10.45 – 11

Daniel Jachyra and Jerzy Gomula and Krzysztof Pancerz

Talk: *Rule-Based Classification of Patients Screened with the MMPI Test in the Copernicus System*

11 – 11.25

Barna Iantovics and Bogdan Crainicu

Title: *Securing the communication of intelligent mobile agents*

11.25 – 11.50

Alexandru-Ioan Stan

Talk: *Day trading the emerging markets using multi-timeframe technical indicators and artificial neural networks*

11.50 – 12.10 Coffee Break

Section 9 Central Building – Room Aula Magna

Moderators:

Mihai Nadin, University of Texas at Dallas, USA

Barna Iantovics, Petru Maior University of Targu Mures, Romania

12.10 – 12.35

Roumen Kountchev, Vladimir Todorov and Roumiana Kountcheva

Talk: *New Format for Coding of Single and Sequences of Medical Images*

12.35 – 13

Veska Georgieva, Roumen Kountchev and Ivo Draganov

Talk: *An Adaptive Approach for Noise Reduction in Sequences of CT Images*

13 – 13.25

Ivo Draganov, Roumen Kountchev and Veska Georgieva

Talk: *Compression of CT Images with Branched Inverse Pyramidal Decomposition*

13.25 – 13.50

Rumen Mironov

Talk: *Adaptive Interpolation and Halftoning for Medical Images*

13.50 – 14.15

Bircea Ioan and Fekete Gyula Laszlo

Talk: *Correlation and regression analysis in chronic venous leg ulcer disease*

Section 10 Central Building – Room L31

Moderator:

Bogdan Pătruț, Vasile Alecsandri University, Bacau, Romania

12.10 – 12.35

Aritoni Ovidiu, Liviu Octavian Mafteiu Scai and Viorel Negru

Talk: *Medical Decision Recommendation System for Assistive Environments based on Scenarios Recognition*

12.35 – 13

Kenneth Revett

Talk: *Evaluation of a cardiocogram dataset using rough sets*

13 – 13.25

Ovidiu Aritoni

Talk: *Data Modeling, Dissemination and Management for Assistive Environments*

13.25 – 13.50

Iulian Furdu and Bogdan Pătruț

Talk: *Towards ICT Revolution in Healthcare: Present and Perspectives for Electronic Healthcare Record Systems*

13.50 – 14.15

Ion Cozac

Talk: *Large Graphs: Fast Cost Update and Query Algorithms Using Reference Nodes*

Section 11 - Central Building – Room Aula Magna

14.15 – 15 Workop conclusions

Moderators:

Roumen Kountchev, Technical University of Sofia, Bulgaria

Barna Iantovics, Petru Maior University, Romania

- Free discussions between participants
- Discussions related with possible future projects

15 – 16.30 Workshop lunch

16.30 – 18 City visit - Tirgu Mures Visit

Contributors to the administrative organization

- Aliz-Edina Soos, Romania
- Radu Boarescu, Romania
- Maria Todoran, Romania

Rooms Locations

*Room: R21 is located in the university building
Petru Maior University
Tagu Mures, Str. Nicolae Iorga, No.1*

*Central Building
Petru Maior University
Tagu Mureş, Str. Nicolae Iorga, No.1
County Mureş, Romania
Postal Code: 540088
Tel (university): +40 265 262275
Fax (university): +40 265 262275*

*Rooms C18, C19, C15, C13, C14
Petru Maior University
Livezeni street, No. 69*