

◆ CONFERENCE OBJECTIVE

The **CompSysTech'04** International Conference is organised by the **Academic Society of Computer Systems and Information Technology**, the **Information and Communication Technologies Development Agency** and the **Bulgarian Chapter of the Association for Computing Machinery – acmbul** and its OBJECTIVE is to intensify the information exchange of the results in theoretical research and practical developments in this field.

CompSysTech'04 is organised under the patronage of:

- EUROPEAN COMMISSION - Directorate-General for Education and Culture;
- OFFICE OF NAVAL RESEARCH INTERNATIONAL FIELD OFFICE;
- Bulgarian Ministry of Education and Science;
- Bulgarian Academy of Sciences;
- Bulgarian Chapter of IEEE Computer Society;
- Bulgarian Chapter of IEEE Communications Society.

◆ INTERNATIONAL PROGRAMME COMMITTEE

• Honorary Chair:

Kiril Boyanov, Acad., DSc. – Bulgaria

• Co-Chairs:

Todor Stoilov, Prof., DSc – Bulgaria;

Boris Rachev, Assoc. Prof., Ph.D. – Bulgaria.

• Members:

Mehdi Jazayeri, Prof., Ph.D. – Austria;
 Fernand Vandamme, Prof., Ph.D. – Belgium;
 Timo Jarvi, Prof., Ph.D. – Finland;
 Vesselin Jossifov, Prof., Ph.D. – Germany;
 Claus Unger, Prof., Dr. – Germany;
 Virginio Cantoni, Prof., Ph.D. – Italy;
 Jorge Ramio, Prof., Ph.D. – Spain;
 Myron Grammatikopoulos, Prof., Ph.D. – Greece;
 Roger Morgan, Prof., Ph.D. – England;
 Janis Grundspenkis, Prof., PhD. – Latvia;
 Rumen Radev, Assoc. Prof., Ph.D. – Bulgaria;
 Danail Dochev, Assoc. Prof., Ph.D. – Bulgaria;
 Angel Popov, Assoc. Prof., Ph.D. – Bulgaria;
 Mitko Kolarov, Assoc. Prof., Ph.D. – Bulgaria;
 Nikolai Lyutov, Assoc. Prof., Ph.D. – Bulgaria;
 Raicho Ilarionov, Assoc. Prof., Ph.D. – Bulgaria;
 Georgi Todorov, Assoc. Prof., Ph.D. – Bulgaria;
 Georgi Totkov, Assoc. Prof., Ph.D. – Bulgaria.

◆ NATIONAL ORGANIZING COMMITTEE

• Co-Chairs:

Angel Smrikarov, Assoc. Prof., Ph.D. – Bulgaria;

Bozhan Zhechev, Assoc. Prof., Ph.D. – Bulgaria;

Orlin Kouzov, MSc – Bulgaria.

• Scientific Secretary:

Dimo Dimov, Assoc. Prof., Ph.D. – Bulgaria

• Members:

Emil Bojanov, Assoc. Prof., Ph.D. – Bulgaria;
 Luben Boyanov, Ph.D. – Bulgaria;
 Iuliana Peneva, Assoc. Prof., Ph.D. – Bulgaria;
 Radi Romanski, Assoc. Prof., Ph.D. – Bulgaria;
 Nayden Vasilev, Assoc. Prof., Ph.D. – Bulgaria;
 Peter Antonov, Assoc. Prof., Ph.D. – Bulgaria;
 Maria Kasheva, Assoc. Prof., Ph.D. – Bulgaria;
 Oleg Asenov, Assoc. Prof., Ph.D. – Bulgaria;
 Stoyanka Smrikarova, Deputy Head of Dpt. – Bulgaria;
 Margarita Todorova, Assoc. Prof., Ph.D. – Bulgaria;
 Rumen Nikolov, Assoc. Prof., Ph.D. – Bulgaria;
 Mario Angelov, Assoc. Prof., Ph.D. – Bulgaria.

Thursday 17th June 2004

08:30 – 14:30

1.311-A

Registration

15:00

Hall A1

OPENING

WELCOME

Chair: **Angel Smrikarov**

PLENARY SESSION

Chair: **Boris Rachev**

Co-chair: **Todor Stoilov**

Key Trends in the Information and Communication Technologies

Kiril Boyanov

Dimitar Todorov

The eSkills Gap – Challenges and Solutions

Martin Bankov

30 years

DEPARTMENT OF COMPUTING

at the University of Rouse

5 years

ACADEMIC SOCIETY

OF COMPUTER SYSTEMS AND INFORMATION TECHNOLOGY

Stoyanka Smrikarova

CONGRATULATIONS

17:30

Visit to the teaching labs

of the Department of Computing in Building No 6

19:30

Restaurant "Riga", Social Evening

CompSysTech'05

SECTION 1

Computer Systems (Hardware)

Chair: **Radi Romanski**
Co-chair: **Angel Popov**
Scientific Secretary: **Nikolai Kostadinov**

SESSION 1

Friday 18th June 2004

09:00 – 11:00

Hall 307

- 1.1. A Flexible and General Solution for Reconfiguring Pipeline Computing Systems
P. Mircea
- 1.2. Solutions for Increasing the Number of PC Parallel Port Control and Selecting Lines
P. Mircea
- 1.3. Dependencies Evaluation in Superscalar Processors
V. Lazarov, M. Marinova
- 1.4. VHDL Modeling of a Fuzzy Co-processor Architecture
R. Raychev, A. Mtibaa, M. Abid
- 1.5. Algorithms for DMA communications
A. Kemalov
- 1.6. The Communication Infrastructure of the MAPNET Mobile-Agent Platform
D. Staneva, P. Gacheva
- 1.7. CGI-based applications for distributed embedded systems for monitoring temperature and humidity
G. Spasov, N. Kakanakov
- 1.8. Implementation of MADM algorithms on FPGA based platforms
I. Kanev

DISCUSSIONS

11:00 – 11:30

Coffee Break

SESSION 2

Friday 18th June 2004

11:30 – 12:00

Hall 307

- 1.9. Industrial controller with built in tester
P. Zlatanov, M. Kolarov
- 1.10. Tutoring Tool for Logical Schemes Design
V. Mateev, P. Manoilov, M. Iliev

DISCUSSIONS

CompSysTech'05

SECTION 2

Computer Systems (Software)

Chair: **Ivan Jelinek**

Co-Chair: **Nikolay Lyutov**

Scientific Secretaries: **Milko Marinov, Tzvetan Hristov**

SESSION 1

Friday 18th June 2004

09:00 – 11:00

Hall 311

- 2.1. Pattern-Based Architectural Design Process Model
N. Levy, F. Losavio
- 2.2.
.....
- 2.3. Data Warehouse Solutions for CRM
O. Muntean
- 2.4. Schema Integration Framed in Modal Logic
V. Boeva
- 2.5. Global Identification of Storage Objects in Network Attached Storage
I. Georgiev, K. Boyanov
- 2.6. E-learning Adaptive Web System's Formal Design
M. Bures, I. Jelinek
- 2.7. Invariant Spaces and Cosine Transforms DCT-2 and DCT-6
B. Zhechev
- 2.8. Using XML to Represent Knowledge by Frames
M. Marinov

DISCUSSIONS

11:00 – 11:30

Coffee Break

SESSION 2

Friday 18th June 2004

11:30 – 13:30

Hall 311

- 2.9. System level modeling of component based software systems
A. Dimov, S. Ilieva
- 2.10. Embedding fuzzy variables into C++
D. Gotseva
- 2.11. An Approach for Response Generation of Restricted Bulgarian Natural Language Queries
S. Arsov

- 2.12. Generalized Net Model of a Program System for Composing Verses
D. Budakova, L. Dakovski
- 2.13. A Computer Implementation of the Generalized Partial Credit Model
L. Christov, D. Tsvetkov
- 2.14. On the Quasi-Newton Training Method for Feed-Forward Neural Networks
N. Stanevski, D. Tsvetkov
- 2.15. Modelling of e-Learning Processes: an Approach Used in Plovdiv e-University
G. Totkov, E. Somova, M. Sokolova
- 2.16. A Program Medium for Teaching
T. Gotcheva, B. Zhechev

DISCUSSIONS

13:30 – 14:30
Lunch

SESSION 3
Friday 18th June 2004
14:30 – 15:30
Hall 311

- 2.17. MAPNET: A .NET-Based Mobile-Agent Platform
D. Staneva, D. Dobreva
- 2.18. WSDL Interface of Services for Distributed Search in Databases
E. Ivanova
- 2.19. Aspects Pattern Oriented Architecture For Distributed Adaptive Mobile Applications
D. Birov
- 2.20. A Software System for Researching of the Traction Capability of Belt Transmissions with Flexible Bandage
S. Stoyanov, A. Dobreva

DISCUSSIONS

SECTION 3-A

Application Aspects of Computer Systems and Technologies

Chair: **Dimo Dimov**

Co-Chair: **Roumen Nikolov**

Scientific Secretaries: **Irena Valova, Silyan Arsov**

SESSION 1

Friday 18th June 2004

09:00 – 11:00

Hall 313

- 3A.1.** Skin color segmentation method based on mixture of Gaussians
P. Gejgus, J. Placek, M. Sperka
- 3A.2.** Adaptive License Plate Image Extraction
V. Shapiro, D. Dimov, S. Bonchev, V. Velichkov, G. Gluhchev
- 3A.3.** Automated Signature Detection from Hand Movement
M. Savov, G. Gluhchev
- 3A.4.** Image Segmentation Using Colour
M. Danaher
- 3A.5.** Using critical points in contours for segmentation of touching characters
V. Alexandrov
- 3A.6.** Leather Features Selection for Defects' Recognition using Fuzzy Logic
K. Krastev, L. Georgieva, N. Angelov
- 3A.7.** Spread spectrum watermarking technique for information system securing
T. Todorov
- 3A.8.** Algorithm and software implementation of QR decomposition of rectangular matrices
T. Stoilov, K. Stoilova

DISCUSSIONS

11:00 – 11:30

Coffee Break

SESSION 2

Friday 18th June 2004

11:30 – 13:30

Hall 313

- 3A.9.** Implementation and Testing of an Algorithm for Global Optimizations with Noise
A. Žilinskas, D. Kučinskas
- 3A.10.** Analysis of Business Process and Capability Hypergraphs
J. Q. Trelewicz, J. L. C. Sanz, A. Chandra

- 3A.11.** A Multicriteria Analysis Decision Support System
K. Genova, V. Vassilev, F. Andonov, M. Vassileva, S. Konstantinova
- 3A.12.** Fuzzy Logic and activity schedules in transport operation
G. Raicu
- 3A.13.** A New Method for Important Points Extraction
D. Tyanev, Y. Petkova
- 3A.14.** Transition Matrix Generation
A. Antonov, Y. Yanakieva
- 3A.15.** Internal Firm Rating Model
A. Antonov, Y. Yanakieva, S. Petrova
- 3A.16.** Data preparation for optimisation of rod cutting with MATLAB
V. Illiev, M. Markov

DISCUSSIONS

13:30 – 14:30
Lunch

SESSION 3
Friday 18th June 2004
14:30 – 16:30
Hall 313

- 3A.17.** Compositing Photographs with Virtual Clothes for Design
B. Spanlang, T. Vassilev, B. F. Buxton
- 3A.18.** Image-space Based Collision Detection in Cloth Simulation on Walking Humans
V. Dochev, T. Vassilev, B. Spanlang
- 3A.19.** A Study of Clustering Applied to Multiple Target Tracking Algorithm
P. Konstantinova, M. Nikolov, T. Semerdjiev
- 3A.20.** Fundamental Matrix Estimation Revisited In Respect To 3D Reconstruction Accuracy
B. Albouy, D. Birov, Y. Lucas, S. Treuillet
- 3A.21.** Storage-Free Terrain Simulation
M. Danaher, W. Creemers
- 3A.22.** Alignment Graph Analysis of Embedded Discrete-Time Markov Chains
D. Radev, S. Radeva
- 3A.23.** Vector Quantization Algorithms for One-Dimensional and Two-Dimensional Time Series
S. Radeva, D. Radev, V. Yakov
- 3A.24.** Interface and Control Manager for Parcels Sorting
A. Atanassov
- 3A.25.** The affects of different queuing disciplines over FTP, Video and VoIP Performance
M. Gospodinov

DISCUSSIONS

SECTION 3-B

Application Aspects of Computer Systems and Technologies

Chair: **Naiden Vasilev**

Co-Chair: **Vladimir Lazarov**

Scientific Secretaries: **Elena Yakimova, Tzanko Golemanov**

SESSION 1

Friday 18th June 2004

09:00 – 11:00

Hall 317

- 3B.1. Recurrence equation as basis for designing hot-potato routing protocols
V. Leppänen, M. Penttonen
- 3B.2. Metadata Driven Code Generation Using .NET Framework
I. Damyanov, N. Holmes
- 3B.3. Data Warehouse in Telecommunication Company Management
K. Shvertner
- 3B.4. Romanian Softawres and Applications for Cutting Stock Problems
C. Fabian
- 3B.5. Portal management
C. Marchev
- 3B.6. Information superhighway. A one-way road
H. Tuzharov, C. Marchev
- 3B.7. Standardization Approach for Information Retrieval in WAN
K. Trichkov
- 3B.8. Modeling network and web services resource using WSDL
M. Tsenov

DISCUSSIONS

11:00 – 11:30

Coffee Break

SESSION 2

Friday 18th June 2004

11:30 – 13:30

Hall 317

- 3B.9. Research on a system performance with parallel modes of execution in a multiprocessor computer system with Hyper-Threading Technology
O. Nakov, S. Stojchev
- 3B.10. Parallel Algorithms of the Scanning Mask Method for Primary Image Processing
A. Bosakova-Ardenska, N. Vasilev

- 3B.11.**A Method for Computer Synthesis of Radio Signals for the Next Generation Personal Communication Systems
B. Y. Bedzhev, Z. N. Tasheva, B. P. Stoyanov
- 3B.12.**An Algorithm for Computer Synthesis of Complementary Sequences
B. Y. Bedzhev, Z. N. Tasheva, B. P. Stoyanov
- 3B.13.**A Flexible Table Driven LR(1) Parser
S. Bonev
- 3B.14.**PER model - Semantic data models developing
H. Tujarov, I. Mihailov
- 3B.15.**Multi-platform, script-based user interface
P. Paskalev, V. Nikolov
- 3B.16.** Software System for Simulation of Electric Power Processes in Photovoltaic-Hybrid System
K. Gabrovska, A. Wagner, N. Mihailov

DISCUSSIONS

13:30 – 14:30
Lunch

SESSION 3
Friday 18th June 2004
14:30 – 16:30
Hall 317

- 3B.17.**Analysis of iSLIP scheduling algorithm for input-queuing switches
M. Gospodinov, E. Gospodinova
- 3B.18.**Analysis of high performance packet switch with input smoothing
E. Gospodinova
- 3B.19.**Microcomputer Protocol Implementation at Local Interconnect Network
G. Krastev
- 3B.20.**A Communication Kernel of a Cluster System for Distributed Simulation
H. Valchanov, I. Ruskov, N. Ruskova
- 3B.21.**ERP-system: A marketing analysis module
T. Golemanov, E. Golemanova
- 3B.22.**ERP-system: A commercial goods planning module
T. Golemanov, E. Golemanova
- 3B.23.**Scheme of Modeling and Lifecycle in the Development of Information Systems in Publishing Activity (ISPA)
I. Mihailov
- 3B.24.**Implementation of International Accounting Standard 39
S. Draganova, S. Stefanov

DISCUSSIONS

SECTION 4

Educational Aspects of Computer Systems and Technologies

Chair: **Georgi Todorov**

Co-chair: **Juliana Peneva**

Scientific Secretaries: **Anelia Vasileva, Rumen Kolev**

SESSION 1

Friday 18th June 2004

09:00 – 11:00

Hall 417

- 4.1. Cisco Networking Academy Program: Global e-learning Laboratory
D. Grancharova
- 4.2. An Electronic Learning Assistant
V. Kolovski, S. Jordanov, J. Galletly
- 4.3. Virtual Laboratories for Collaborative Working in Environment Water
K. Holz, G. Hildebrandt, T. Neltchinova
- 4.4. Information systems research methodologies and models
A. Caplinskas, O. Vasilecas
- 4.5. Education and Training in Computer Simulation - a Way to Nested Simulation
I. Krivy, E. Kindler
- 4.6. Learning objects in a multimedia interactive environment
A. Matthiasdottir
- 4.7. Towards providing distance learning students with a comparable learning experience
K. Jones, R. Bartlett
- 4.8. Using a computer-based interactive system for the development of basic algorithmic and programming skills
M. Marcelino, A. Gomes, N. Dimitrov, A. Mendes

DISCUSSIONS

11:00 – 11:30

Coffee Break

SESSION 2

Friday 18th June 2004

11:30 – 13:30

Hall 417

- 4.9. LearningOnWeb – development of a SCORM compliant Learning Management System
N. Henriques, D. Slavov, A. Mendes

- 4.10. Some Remarks on Teaching of Programming
J. Jablonowski
- 4.11. Asynchronous E-Learning Resources for Hardware Design Issues
A. Jutman, A. Sudnitson, R. Ubar, H. Wuttke
- 4.12. Modeling Teaching and Learning Environments
I. Zheliazkova, R. Kolev
- 4.13. A three-level learner's model for the needs of an integrated environment for individual planned teaching
I. Zheliazkova, R. Kolev
- 4.14. Didactical and technological issues during the development process of e-learning courses
G. Tuparov, D. Dureva, J. Peneva
- 4.15. Foundations of Web-based virtual Medical university. 3. Distance Web-based learning and planning, organizing and controlling of regular education via MUS-portal
G. Kossekova, I. Hadjiiska, D. Kostadinova
- 4.16. Virtual laboratory as a tool to increase student's research work
I. Pankov, E. Karaminkova

DISCUSSIONS

13:30 – 14:30
Lunch

SESSION 3
Friday 18th June 2004
14:30 – 16:30
Hall 417

- 4.17. Individually Adaptive e-Learning Management System Project
K. Ivanov, Sv. Zabunov
- 4.18. Testing system "Archimedes" for local or remote assessment of student's knowledge
B. Slavov, T. Dimov
- 4.19. Multimedia Training Course on C++
E. Georgieva, M. Teodosieva, T. Georgiev, S. Smrikarova
- 4.20. Graphical User Interface of a Interactive System for Schemes Design, Used in Distance Learning
P. Manoilov, V. Mateev, M. Iliev
- 4.21. A Model for describing and structuring learning objects
V. Petrova, M. Todorova
- 4.22. Implementation of the Web-based Learning in Post-graduate Education
V. Terzieva, K. Todorova, L. Simeonova
- 4.23. Conceptual model for investigation of the information servicing in a distributed informational-learning environment
R. Romansky, I. Nikolova
- 4.24. Applying IMS Content Packaging and Meta-data Specifications in "XML Fundamentals" e-learning course
L. Vladinova, D. Leskovska

DISCUSSIONS

16:30 – 17:00
Coffee Break

SESSION 4
Friday 18th June 2004
17:00 – 18:00
Hall 417

- 4.25. A Visual Language For Algorithm Knowledge Representation
I. Zheliazkova, G. Atanasova
- 4.26. Some Approaches to implementation of Virtual Learning Environments
G. Ivanova, A. Smrikarov
- 4.27. A New Approach for SCORM Compatible Database Design
T. Hristov, A. Smrikarov, T. Georgiev
- 4.28. A Training Software Environment for Square Root Calculation
A. Vasileva, A. Smrikarov, T. Toteva
- 4.29. M-Learning - a New Stage of E-Learning
T. Georgiev, E. Georgieva, A. Smrikarov

DISCUSSIONS

CompSysTech'05

SECTION 5

Workshop for PhD Students

The **Workshop** will be useful mainly for **doctoral students**.

LECTURERS:

Prof. Dr. Michael O hEigartaigh

Case study on combinatorial enumeration

Quantum computing

Combinatorial optimisation

Prof.Dr. Heikki Kalviainen

Image-Based Biometric Person Authentication

Chair: **Raicho Ilarionov**

Co-chair: **Lidiya Georgieva**

Scientific Secretaries: **Galina Ivanova, Dimityr Vylkov**

SESSION 1

Friday 18th June 2004

09:00 – 11:00

Hall for PhD Students – Floor 3

11:00 – 11:30

Coffee Break

SESSION 2

Friday 18th June 2003

11:30 – 13:30

Hall for PhD Students – Floor 3

13:30 – 14:30

Lunch

SESSION 3**Friday 18th June 2003****14:30 – 16:30****Hall for PhD Students – Floor 3**

- 5.1. Specification and Formal verification of security requirements
I. Agudo, J. Lopez
- 5.2. Database in Web Environment
R. Dvorak, I. Jelinek
- 5.3. Using Centralized Element in P2P Network for Better Community Management
A. Moravek, I. Jelinek
- 5.4. Component Based Development Methods - comparison
D. Jisa
- 5.5. Location of data in limitation capacity FLASH memory with hash- methods.
N. Mindov
- 5.6. Multidimensional models - Constructing DATA CUBE
A. Ivanova, B. Rachev
- 5.7. About the Standardization and the Interoperability of E-Learning Resources
C. Krusteva, G. Totkov, N. Baltadzhiev
- 5.8. A Case Based Reasoning Approach for Development of Intelligent Services
S. Stojanov, I. Popchev, D. Chaushkova, M. Trendafilova

DISCUSSIONS

16:30 – 17:00**Coffee Break**

SESSION 4**Friday 18th June 2004****17:00 – 17:30****Hall for PhD Students – Floor 3**

- 5.9. A Language for Describing the Generating Structure of the Educational Material in the Individually Adaptive Learning Management System
S. Zabunov
- 5.10. Model of an intellectual search engine represented by the fuzzy sets theory
H. Moneva

DISCUSSIONS