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 Dachev, 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 Toktov, Assoc. Prof., Ph.D. – Bulgaria.

NATIONAL ORGANIZING COMMITTEE

- Co-Chairs:
  Angel Smrikarov, Assoc. Prof., Ph.D. – Bulgaria;
  Bozhlan 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;
  Rade Romanski, Assoc. Prof., Ph.D. – Bulgaria;
  Nayden Vassilev, 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 Rousse
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
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. Manoillov, M. Iliev

DISCUSSIONS
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
   D. Budakova, L. Dakovski
   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
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
A. Bosakova-Ardenska, N. Vasilev
B. Y. Bedzhev, Z. N. Tasheva, B. P. Stoyanov

An Algorithm for Computer Synthesis of Complementary Sequences
B. Y. Bedzhev, Z. N. Tasheva, B. P. Stoyanov

A Flexible Table Driven LR(1) Parser
S. Bonev

PER model - Semantic data models developing
H. Tujarov, I. Mihailov

Multi-platform, script-based user interface
P. Paskalev, V. Nikolov

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

Analysis of iSLIP scheduling algorithm for input-queuing switches
M. Gospodinov, E. Gospodinova

Analysis of high performance packet switch with input smoothing
E. Gospodinova

Microcomputer Protocol Implementation at Local Interconnect Network
G. Krastev

A Communication Kernel of a Cluster System for Distributed Simulation
H. Valchanov, I. Ruskov, N. Ruskova

ERP-system: A marketing analysis module
T. Golemanov, E, Golemanova

ERP-system: A commercial goods planning module
T. Golemanov, E, Golemanova

Scheme of Modeling and Lifecycle in the Development of Information Systems in Publishing Activity (ISPA)
I. Mihailov

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  
L. Vladinova, D. Leskovska  

DISCUSSIONS
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
SECTION 5

Workshop for PhD Students

The Workshop will be useful mainly for doctoral students.

LECTURERS:

Prof. Dr. Michael O hEigeartaigh  
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