



**Technical University of Sofia**

**Faculty of Computer Systems and Control**

## **GENERAL CHAIR**

**Plamenka Borovska,**  
Technical University of Sofia, Bulgaria

## **VICE CHAIRS**

**Ognian Nakov,** Technical University of Sofia  
**Juliana Georgieva,** Technical University of Sofia

## **TOPICS**

- ◆ **Workshop on Supercomputers Architecture and Applications**
- ◆ **Workshop on Service Oriented Architectures**
- ◆ **Workshop on BioComputing**
- ◆ **Advanced Algorithms and Complexity Theory**
- ◆ **Computational Intelligence**
- ◆ **Computer Systems and Networks**
- ◆ **Information Management**
- ◆ **Information Technologies**
- ◆ **Programming Languages**
- ◆ **Software Systems and Methodologies**

## INTERNATIONAL ORGANIZING COMMITTEE

**Sofoklis Christoforidis,**

TEI of Kavala, Greece

**Vassilios Chatzis,**

TEI of Kavala, Greece

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Technical University of Sofia

**Stoyan Bonev,**

American University in Bulgaria

**Tasho Tashev,**

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**Daniela Goceva,**

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**Georgi Popov,**

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**Milena Lazarova,**

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Technical University of Sofia

**Iva Nikolova,**

Technical University of Sofia

**Hristo Santulov,**

Telematika College, Bulgaria

## INTERNATIONAL PROGRAM COMMITTEE

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TEI of Kavala, Greece

**Chatzoglou Podromos,**

TEI of Kavala, Greece

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**Betim Cico,**

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**Nina Sinjagina,**

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Boazici University, Turkey

**John Galletly,**

American University in Bulgaria

**Hristo Hristov,**

Technical University of Sofia, Bulgaria

**Leandyr Litov,**

University of Sofia, Bulgaria

**Marin Hristov,**

Technical University of Sofia, Bulgaria

**Todor Neshkov,**

Technical University of Sofia, Bulgaria

**THURSDAY, November 5<sup>th</sup>, 2009**

**9:00 - 12:00**

**Registration**

**10:00**

## **Opening Ceremony**

**Jubilee**

**40 Years Department of Computer Systems**

**25 Years Department of Programming and Computer Technologies**

**Technical University of Sofia**

**Photo of the Conference Participants**

***1152 - Prof. Borovski Hall***

**12:00 - 13:00**

**Lunch break**

13:00 – 15:00

## Plenary Session

Chair: *Plamenka Borovska*

*1152 - Prof. Borovski Hall*

**Supercomputing: Methods, Algorithms and Applications**

*Svetozar Margenov, Bulgarian Academy of Sciences*

**Study of wave-particles interaction in the inner magnetosphere: application to “Space weather”**

*M. Magilevsky, Russian Academy of Sciences*

15:00 – 15:30

Coffee break

**THURSDAY, November 5<sup>th</sup>, 2009**

## **WORKSHOP ON SERVICE ORIENTED ARCHITECTURES**

### **15:30 – 16:30 Session 1**

***Conference Hall 2305***

Chair: ***Mariana Goranova***

Vice-chair: ***Virginiya Dimitrova***

1. XPDL Workflow Solutions and Service-Oriented Architectures - A Case Study  
*Orlin Genchev, John Galletly*
2. SOA Based Approach for Analysis Support and Process Modelling  
*Plamena Andreeva, Anton Lazarov, Ivo Radulov*
3. Processing of Data Measured Onboard of Spacecraft  
*Nikolay Bankov, Tsvetan Dachev, Jordanka Semkova, Rositza Koleva*
4. Data From Spacecraft Born Spectrometers of Charged Particles  
*Rositza Koleva, Jordanka Semkova, Stefan Maltchev*
5. Scientific Data Description  
*Juliana Georgieva, Mariana Goranova, Bogdan Shishedjiev*

### **16:30 – 16:45 Session 2**

***Poster Hall 2305***

1. How People Perceive Information by Vision  
*Vesselin Gueorguiev, Desislava Georgieva*
2. Information Visualization as a Way to Reveal Hidden Information  
*Vesselin Gueorguiev, Desislava Georgieva*

### **16:45 – 17:30 Session 3**

***Conference Hall 2305***

Chair: ***Mariana Goranova***

Vice-chair: ***Virginiya Dimitrova***

1. Formalized Field Description That Allows Platform- and System-Independent Field Calculation and Visualization  
*Virginiya Dimitrova, Mariana Goranova, Bogdan Shishedjiev*
2. Extending the Possibilities of a Standard Graphics Packet to Calculate Low-Frequency Magnetic Field  
*Virginiya Dimitrova*
3. Visualization Techniques for Multidimensional Data, Implemented as Web-Services  
*Virginiya Dimitrova, Stoyan Maleshkov*
4. A Database for Scientific Data Description  
*Bogdan Shishedjiev, Veska Gancheva, Adrian Pavlov*

THURSDAY, November 5<sup>th</sup>, 2009

**WORKSHOP ON  
SUPERCOMPUTERS ARCHITECTURE AND APPLICATIONS**

**15:30 – 17:30 Session I**

*Conference Hall 1315*

Chair: *Plamenka Borovska*

Vice-chair: *Desislava Ivanova*

1. High-Performance Computer Architectures and Networks  
*Stoyan Markov*
2. Remote Sensing Applications of Multicomputer Systems for Environment  
*Nikola Kolev*
3. High-Performance Computing: Large Scale Simulations in Drug Design  
*Leander Litov*
4. High-Performance Computations in Remote Sensing of the Earth  
*Milena Lazarova*

**THURSDAY, November 5<sup>th</sup>, 2009**

**SECTION 1  
SOFTWARE SYSTEMS AND METHODOLOGIES**

**15:30 – 17:30 Session 1**

***Conference Hall 1316***

Chair: ***Daniela Goceva***

Vice-chair: ***Filip Stoichkov***

1. Tools for the Non-Deterministic Resource Framework  
*Niko Zenker, Frederik Kramer, Georg Paul*
2. Software Architectures for Medical Information Systems  
*Ivan Ivanov, Vesselin Gueorguiev, Nikolay Baldzhiev, Boyan Kehayov*
3. Five Years Later – it is Time for Multimedia Mobile Learning  
*Evgeniya Georgieva, Tsvetozar Georgiev*
4. Design and Modelling of Cloud Services Architecture  
*Iordan Iordanov, Vasil Georgiev*
5. Architecting Process for High-Level Social-Oriented Resource Allocation Cloud  
*Vasil Georgiev, Iordan Iordanov*
6. SNMP to PTP Management Interface  
*Kujtim Hyseni, Ilir Limani, Lavdim Kurtaj, Genc Hyseni*

**THURSDAY, November 5<sup>th</sup>, 2009**

**SECTION 1  
SOFTWARE SYSTEMS AND METHODOLOGIES**

**15:30 – 16:30 Session 2**

***Poster Hall 1309***

Chair: ***Sergey Nedev***

1. Method for Realization of Self-Controlling Loop Apparatus Structures  
*Dimitar Tyanev, Dragomir Yanev, Stamen Kolev*
2. Approach for 3D Shape Description of Image Objects that is Stable with Respect of Transformations  
*Mariana Stoeva*
3. A Tool for Image Processing Algorithms Realization  
*Violeta Bozhikova, Angelina Nikolova, Mariana Stoeva*
4. Software for Simulation of Multiplication with Binary Fixed-Point Numbers  
*Sergey Nedev*
5. Bulgarian Application of Inspire – the Directive for Establishing an Infrastructure for Spatial Information in the EC  
*Roumen Trifonov, Irina Vassileva*
6. Bulgarian E-Government Development  
*Ljudmil Dakovski, Roumen Trifonov, Boyan Jekov*
7. E-Health in Bulgaria  
*Roumen Trifonov, Petyo Kovachev*
8. Evaluation of Template Matching Precision in Dependence on Template Shape  
*Yulka Petkova, Nuri Nuri, Milena Karova*
9. Software System for Curriculum Management  
*Plamenka Borovska, Silviya Karaivanova, Veska Gancheva*

THURSDAY, November 5<sup>th</sup>, 2009

## SECTION 2 ADVANCED ALGORITHMS AND COMPLEXITY THEORY

16:30 – 17:30 Session 1

*Poster Hall 1309*

Chair: *Adelina Aleksieva-Petrova*

1. Projective Planes, Cliques and Convex Hull  
*Roumen Nedev*
2. Round - Robin Methods for Process Optimization  
*Ognian Nakov, Desislava Andreeva, Filip Stoichkov, Nadia Angelova*
3. A Heuristic Evolutionary Algorithm for Conference Timetables Management  
*Plamenka Borovska, Krasimira Maldzhanska, Adelina Aleksieva-Petrova, Plamen Petrov*
4. Diversity as Tool for Increase Reliability of Systems  
*Georgi Popov*

## SECTION 3 COMPUTER SYSTEMS AND NETWORKS

16:30 – 17:30 Session 1

*Poster Hall 1309*

Chair: *Georgi Naydenov*

1. Parallel DSP Realized by Multiprocessor System on Chip  
*Peter Manoilov, Boriana Delijska*
2. FPGA Based Architecture for Digital Image Visualization  
*Peter Manoilov, Iva Nikolova,*
3. Designing and Building Height Security Computer Networks  
*Georgi Naydenov, Petko Stoyanov*
4. Modelling and Simulation Environments for Network on Chip Architectures: Survey  
*Plamenka Borovska, Ivailo Georgiev*
5. Application of wireless local area networks (WLAN) as communication tools in mining industry'  
*Stanislav Dimov*

**FRIDAY, November 6<sup>th</sup>, 2009**

## **SECTION 3 COMPUTER SYSTEMS AND NETWORKS**

**9:00 – 10:30 Session 2**

*Conference Hall 2305*

Chair: *Kamen Fillyov*

Vice-chair: *Grisha Spasov*

1. Control and Information Management Block in Mobile Distributed Systems  
*Grisha Spasov, Velislava Spasova*
2. Computer Based System for Automated Calibration of Measuring Devices  
*Nikolay Gourav*
3. Spam Detection on P2P System Using Agents  
*M. Packiavathy, K. Saruladha*
4. Universal GA for Group Formation  
*Milena Karova, Gospodin Gospodinov, Dimitar Stefanov, Yulka Petkova*

**10:30 – 11:00 Coffee break**

**11:00 – 12:30 Session 2**

*Conference Hall 2305*

Chair: *Peter Manoilov*

Vice-chair: *Ivan Stankov*

1. A Study of the Wireless Network Security  
*Hristo Valchanov, Ivan Ruskov, Atanas Varbanov*
2. Comparison of Machine Vision Architectures and Real-time Algorithms in Discrete Automated Production  
*Irina Topalova, Alexander Tzakev*
3. Development of a System Supporting the Medical Diagnosis  
*Mehmed Yusuf*
4. Realization of Portfolio Management System in a Distributed Computing Environment  
*Ivaylo Penev*

**FRIDAY, November 6<sup>th</sup>, 2009**

## **SECTION 4 COMPUTATIONAL INTELLIGENCE**

**9:00 – 10:30 Session 1**

***Conference Hall 1315***

Chair: ***Lyudmil Dakovski***

Vice-chair: ***Diana Grigorova***

1. Modified "Water Flow" Method for Reference Text Line Detection  
*Darko Brodić, Zoran Miliwojević*
2. Evolutionary Approaches for Optimal Filling of Blocks (Containers)  
*Hristo Toshev, Stefan Koynov, Chavdar Korsemov*
3. Modeling of Project Schedules using 3D Generalized Networks  
*Ivaylo Vasilev*
4. Learning by Negation of the Negative Examples – Rule Representation versus Tree Representation  
*Zekie Shevked, Lyudmil Dakovski*
5. Collecting Knowledge and Learning Languages Playing Two Levels Game  
*Dilyana Budakova, Lyudmil Dakovski*

**10:30 – 11:00 Coffee break**

**11:00 – 12:00 Session 2**

***Poster Hall 1309***

Chair: ***Konstantin Kostadinov***

1. Modeling of Network Logic Diagrams in the Project Using 3D Generalized Networks  
*Ivaylo Vasilev*
2. Modeling of Work Procedures within the Company Using 3D Generalized Networks.  
*Ivaylo Vasilev*
3. Governmental Policy for Network and Information Security  
*Slavcho Manolov, Roumen Trifanov*
4. Study and Analysis of Synonymous SQL Constructions  
*Konstantin Kostadinov*

**FRIDAY, November 6<sup>th</sup>, 2009**

## **WORKSHOP ON SUPERCOMPUTERS ARCHITECTURE AND APPLICATIONS**

**11:00 – 13:00 Session 2**

***Conference Hall 1315***

Chair: ***Milena Lazarova***

Vice-chair: ***Desislava Ivanova***

1. A Comparative Analysis of Next Generation High-End Switch Architectures  
*Desislava Ivanova, Anton Ruzhekov, Alexander Karaivanov*
2. Multi-core Architectures and Streaming Applications, trends, innovations, perspectives  
*Desislava Ivanova, Georgi Georgiev, Kamen Ivanov*
3. Simulation Model of High Speed Packet Switch Architecture Using OMNeT  
*Plamenka Borovska, Georgi Georgiev, Ivailo Georgiev*
4. Parallel Metaheuristics for Optimization and Metaheuristic Class Libraries  
*Plamenka Borovska, Nikolai Landzhev*
5. Parallel Computational Model for Fire Detection and Monitoring Based on Satellite Data  
*Plamenka Borovska, Dgnian Nakov, Milena Lazarova, Milena Yordanova, Stefan Yordanov*
6. DSP Algorithms in Modern Programmable Architecture - Parallelisms of Implementation  
*Anna Kuncheva*
7. Parallel Combinatorial Optimization of the Timetabling Problem by Ant Colony Metaheuristics  
*George Yanchev*

## **WORKSHOP ON BIOCOMPUTING**

**11:00 – 13:00 Session 1**

***Conference Hall 1315***

Chair: ***Milena Lazarova***

Vice-chair: ***Desislava Ivanova***

1. HPD Model for Protein Structure Simulation  
*Stefka Fidanova*
2. Non-Cooperative Iris Recognition System: A review  
*Abdulsamad Ebrahim Yahya, Mad Jan Nordin*

**FRIDAY, November 6<sup>th</sup>, 2009**

## **SECTION 5 INFORMATION TECHNOLOGIES**

**9:00 – 10:30 Session 1**

***Conference Hall 1316***

Chair: ***Juliana Georgieva***

Vice-chair: ***Veska Gantcheva***

1. A Secure Printing Approach for Stock Exchange System  
*Roumen Nedev*
2. Generalised Mathematical Model Describing the Dynamics of a Class of Marine Vessels  
*Konstantin Kapinchev*
3. Analysis and Estimation Corporate Risk in Non-Financial Institution. Risk Management System for Corporations  
*Galina Naydenova*
4. Personal Biometric Identification Based On Modality Fusion  
*Strahil Sokolov, Yuliyana Velchev, Ognian Boumbarov*
5. Face Detection and Feature Extraction for Intelligent Video Surveillance  
*Strahil Sokolov, Ognian Boumbarov*

**10:30 – 11:00 Coffee break**

**FRIDAY, November 6<sup>th</sup>, 2009**

## **SECTION 5 INFORMATION TECHNOLOGIES**

**11:00 – 12:30 Session 2**

***Conference Hall 1316***

Chair: ***Stoyan Bonev***

Vice-chair: ***Iva Nikolova***

1. Software System for Active Collaborative Learning in Primary Education  
*Milena Lazarova, Dilyan Rusev, Kiril Rusev, Nikola Kosev, Raya Yunakova*
2. The Design of a New Program in Informatics  
*Dimitar Christozov, John Galletly, Valin Karagiozov, Stoyan Bonev, Alf Eastergard*
3. Solutions for Creating Multilingual WEB Sites with Implementation of CMS and LMS  
*Bozhidar Georgiev*
4. Component Based Approach for Specification and Verification of Distributed Real Time Systems  
*Desislava Ivanova*
5. XML as FSA Description Language  
*Stoyan Bonev, Victor Tashkov*
6. OLAP Databases - Maintenance of Exceptions to Functional Dependencies in Dimension Hierarchies  
*Anna Rozeva*

**FRIDAY, November 6<sup>th</sup>, 2009**

## **SECTION 5 INFORMATION TECHNOLOGIES**

**9:00 – 10:30 Session 3**

***Poster Hall 1309***

Chair: ***Cyril Mechkov***

1. An Electronic Health Record: The State of The Art  
*Ivan Evg. Ivanov, Vesselin Gueorguiev, Velizar Bodurski, Emanuil Markov*
2. Integrating Document Based Quizzes in Moodle LMS  
*Yoana Minkova*
3. E-Procurement System in Europe  
*Roumen Trifonov, Marieta Popova*
4. Architecture of Integrated E-voting System  
*N. Stoyanov, Plamenka Borovska, Polina Bikova*
5. Information System for Student Training Program  
*Dgnian Nakov, Adelina Aleksieva, Desislava Andreeva*
6. Create Auction Ontology for Semantic Web  
*Plamenka Borovska, Adelina Aleksieva, Milen Petrov*
7. Investigating the Linear Mode of Current Inversion Negative Impedance Converters  
*Cyril Mechkov*
8. Optimization Criteria of a System for E-Learning  
*Daniela Minkovska, Gospodin Jelev*
9. Investigating the Linear Mode of Voltage Inversion Negative Impedance Converters  
*Cyril Mechkov*
10. Comparison And Evaluation of Open Source E-Learning Systems  
*Yoana Minkova, Gospodin Jelev*
11. Concurrency Access Techniques in Object Oriented Databases  
*Lyubomir Milkov, Mariana Goranova*

## CONFERENCE TIMETABLE

Time	Place			
	Conference Hall 2305	Conference Hall 1315	Conference Hall 1316	Poster Hall 1309
<b>THURSDAY, November 5<sup>th</sup>, 2005</b>				
9:00 - 12:00	REGISTRATION			
10:00 - 12:00	Opening Ceremony, 1152 - Prof. Borovski Hall			
12:00 - 13:00	Lunch break			
13:00 - 15:00	Plenary Session, 1152 - Prof. Borovski Hall			
15:00 - 15:30	Coffee break			
15:30 - 16:30	<i>Workshop on Service Oriented Architectures</i> Session 1	<i>Workshop on Supercomputers Architecture and Applications</i>	<u>Section 1</u> <i>Software Systems and Methodologies</i> Session 1	<u>Section 1</u> <i>Software Systems and Methodologies</i> Session 2
16:30 - 17:30				<u>Section 2</u> <i>Advanced Algorithms and Complexity Theory</i> Session 1
19:30	<b>OFFICIAL DINNER</b>			
<b>FRIDAY, November 6<sup>th</sup>, 2009</b>				
9:00 - 10:30	<u>Section 3</u> <i>Computer Systems and Networks</i> Session 2	<u>Section 4</u> <i>Computational Intelligence</i> Session 1	<u>Section 5</u> <i>Information Technologies</i> Session 1	<u>Section 5</u> <i>Information Technologies</i> Session 3
10:30 - 11:00	Coffee break			
11:00 - 13:30	<u>Section 3</u> <i>Computer Systems and Networks</i> Session 3	<i>Workshop on Supercomputers Architecture and Applications</i> Session 2	<u>Section 5</u> <i>Information Technologies</i> Session 2	<u>Section 4</u> <i>Computational Intelligence</i> Session 2
		<i>Workshop on Biocomputing</i> Session 1		