

UNIVERSITY of RUSE
8 STUDENTSKA STR.

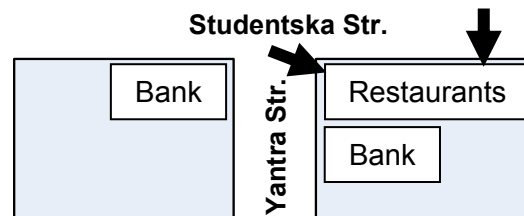
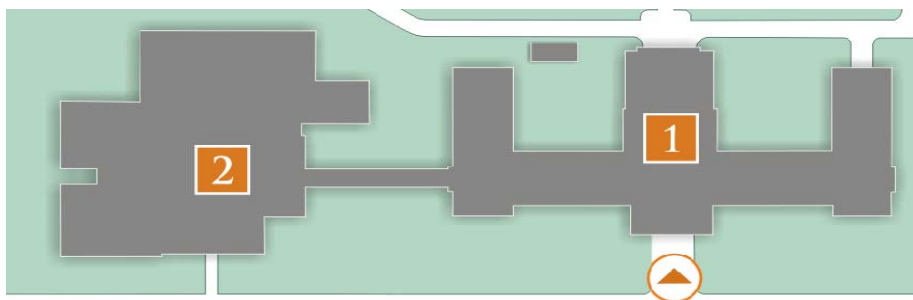
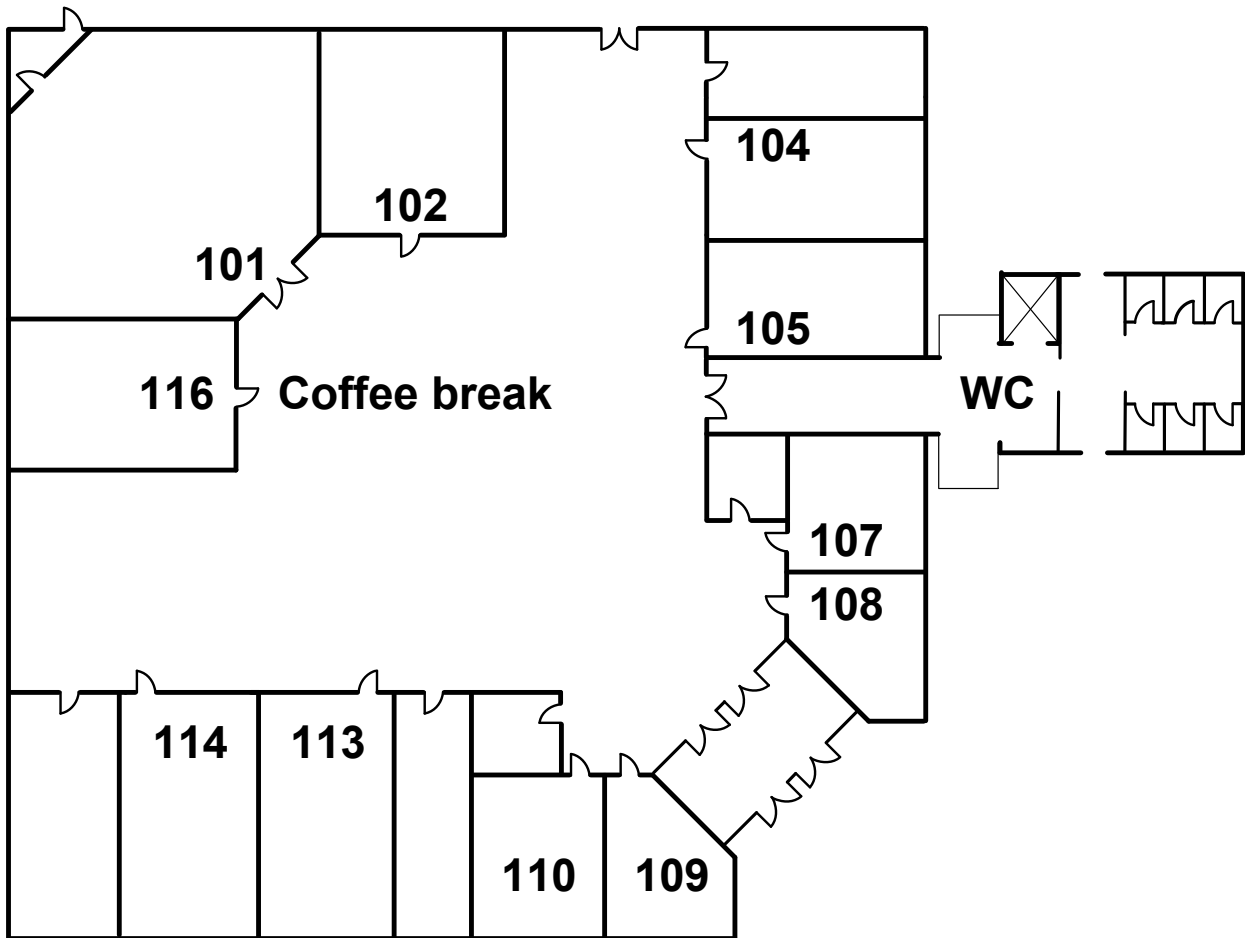


The new building

The main building



THE NEW BUILDING



Dear Participants,

You can use free **WIRELESS INTERNET** via hot-spot points named **CompSys** (no need of login name and password).

You can also use the **COMPUTERS** in the Centre for PhD students – main building, in the middle of the 3 floor.

◆ CONFERENCE OBJECTIVE

The *CompSysTech'12* International Conference is organized by **THE ASSOCIATION FOR COMPUTING MACHINERY**, by **THE JOHN ATANASOFF SOCIETY OF AUTOMATICS AND INFORMATICS** and by **THE BULGARIAN ACADEMIC SOCIETY OF COMPUTER SYSTEMS AND INFORMATION TECHNOLOGIES** and its OBJECTIVE is to intensify the information exchange of results in theoretical research and practical developments in this field.

CompSysTech'12 is organized under the patronage of:

- Bulgarian Ministry of Education, Youth and Science;
- Bulgarian Academy of Sciences;
- Bulgarian Chapter of IEEE Computer Society;
- Bulgarian Chapter of IEEE Communications Society.

◆ INTERNATIONAL PROGRAMME COMMITTEE

- Honorary Co-Chairs:

Kiril Boyanov, Acad., DSc. (Bulgaria)

Vassil Sgurev, Acad., DSc. (Bulgaria)

- Co-Chairs:

Todor Stoilov, Prof., DSc. (Bulgaria)

Boris Rachev, Assoc. Prof., Ph.D. (Bulgaria)

- Scientific Secretary:

Dimo Dimov, Assoc. Prof., Ph.D. (Bulgaria)

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Alexander Sudnitson (Estonia)

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Chakib Tadj (Canada)

Constantinos Patichis (Cyprus)

Dana Petcu (Romania)

Danail Dochev (Bulgaria)

Diana Kalibatiene (Lithuania)

Dieter Wuttke (Germany)

Dimitris Karagiannis (Austria)

Douglas Harms (United States)

Erika Asnina (Latvia)

Francisca Losavio (Venezuela)

Georgi Gluhchev (Bulgaria)

Georgi Todorov (Bulgaria)

Gotcho Gotchev (Bulgaria)

Grisha Spasov (Bulgaria)

Gundars Alksnis (Latvia)

Haiyun Bian (United States)

Howard Duncan (Ireland)

Iliya Georgiev (United States)

Ioannis Stamelos (Greece)

Ivan Jelinek (Czech Republic)

Janis Grundspenkis (Latvia)

Janusz Jabłomowski (Poland)

John Galletly (Bulgaria)

Jordan Kolev (Bulgaria)

Jukka Teuhola (Finland)

Juliana Peneva (Bulgaria)

karl Jones (United Kingdom)

Kostadin Kratchanov (Turkey)

Krassen Stefanov (Bulgaria)

Ladislav Hudec (Slovakia)

Leon Rothkrantz (Netherlands)

Leonid Kirilov (Bulgaria)

Leonid Rozenblyum (United States)

Lyudmil Dakovski (Bulgaria)

Marco Porta (Italy)

Margarita Todorova (Bulgaria)

Maria Jose Marcelino (Portugal)

Marite Kirikova (Latvia)

Marjan Hericko (Slovenia)	Olegas Vasilecas (Lithuania)
Markus Helfert (Ireland)	Pavol Navrat (Slovakia)
Mayer Aladjem (Israel)	Peter Stanchev (United States)
Melih İnal (Turkey)	Radi Romansky (Bulgaria)
Michael Vassilakopoulos (Greece)	Radu Dobrin (Sweden)
Milan Dimitrijevic (Serbia)	Rebecca Bartlett (United Kingdom)
Milcho Tsvetkov (Bulgaria)	Stanislav Ivanov (Bulgaria)
Milena Dobрева (Malta)	Stavros Nikolopoulos (Greece)
Mirjana Ivanovic (Serbia)	Stoicho Stoichev (Bulgaria)
Mouzhi Ge (Germany)	Tadeusz Morzy (Poland)
Neli Maneva (Bulgaria)	Tanja Urbančič (Slovenia)
Nicole Levy (France)	Tzvetomir Vassilev (Bulgaria)
Nik Bessis (United Kingdom)	Ville Leppänen (Finland)
Nikolay Dokev (Bulgaria)	Yannis Manolopoulos (Greece)
Novruz Allahverdi (Turkey)	Yuri Rogozov (Russia)
Ognyan Kounchev (Bulgaria)	

◆ NATIONAL ORGANIZING COMMITTEE

• Co-Chairs:

Angel Smrikarov, Prof., Ph.D. (Bulgaria)

Emil Bojanov, Assoc. Prof., Ph.D. (Bulgaria)
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• Secretary:

Margarita Grigorova (Bulgaria)

• Members:

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Tzvetozar Georgiev (Bulgaria)	Grisha Spasov (Bulgaria)
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Katalina Grigorova (Bulgaria)	Margarita Todorova (Bulgaria)
Yordan Kalmukov (Bulgaria)	Raicho Ilarionov (Bulgaria)
Irena Valova (Bulgaria)	Boyanka Zhelyazova (Bulgaria)

◆ TOPICS

1. Computer Systems (Hardware).
2. Computer Systems (Software).
3. Application Aspects of Computer Systems and Technologies.
4. Educational Aspects of Computer Systems and Technologies.
5. The youth and the ICT

◆ Co-located Event

Mini-symposium on Astroinformatics

Friday 22th June 2012

09:00 – 14:30

**In the new building, 2.109
Registration**

15:00

New building, 2.101

OPENING

WELCOME

Chair: **Angel Smrikarov**

ALAN TURING

100 YEARS FROM THE BIRTH

Kiril Boyanov

THE ACM A.M. TURING AWARD

Boris Rachev

PLENARY SESSION

Chair: **Todor Stoilov**



BORIS NOVIKOV

Department of Computer Science
St. Petersburg University, Russia

Lecture on:

Querying Big Data

Coffee Break - Foyer

**MIRJANA IVANOVIĆ**

Department of Mathematics and Informatics
University of Novi Sad, Serbia

Lecture on:

Software Agents: State-of-the-Art and Possible Applications

**KAMEN KANEV**

Research Institute of Electronics
Shizuoka University, Japan

Lecture on:

Augmented Tangible Interface Components and Image Based Interactions

DISCUSSIONS

18:00

Sightseeing of the UNIVERSITY of RUSE

19:30

**Social Evening in the Restaurant "RIGA"
22 Pridunavski Blvd**

SECTION 1

Computer Systems (Hardware)

Chair: **Ville Leppänen**
Co-Chair: **Radoslav Mladenov**
Scientific Secretary: **Orlin Tomov**

Saturday 23th June 2012
09:00 – 09:45
New building, Hall 2.113

1. Work-Optimal Two-Phase Routing in a Sparse Optical Torus
Risto Honkanen, Ville Leppänen
2. Preliminary Analysis of Feasible Benchmark Problems for the Hybrid PRAM/NUMA REPLICAS Architecture
Jari-Matti Mäkelä, Ville Leppänen, Martti Forsell
3. An Efficient Non-Volatile Main Memory Using Phase Change Memory
Radoslav Mladenov

DISCUSSIONS

11:00 – 11:30
Coffee Break - Foyer

SECTION 2

Computer Systems (Software)

Chair: **Stavros Nikolopoulos**

Co-Chair: **Irena Valova**

Scientific Secretaries: **Ivaylo Kamenarov**

SECTION 2 - SESSION 1

Saturday 23th June 2012

09:00 – 11:00

New building, Hall 114

1. An Overview of the Knowledge Discovery Meta-Model
Kestutis Normantas, Sergejus Sosunovas, Olegas Vasilecas
2. Semantic Lifting of Unstructured Data Based on NLP Inference of Annotations
Ivo Marinchev
3. Use of Ontology-to-Text Relation for Creating Semantic Annotations
Kamenka Staykova, Gennady Agre
4. Object Relational Business Process Repository
Katalina Grigorova, Ivaylo Kamenarov
5. Performance Analysis of MQL Drilling Using Artificial Neural Network
Sona Azarrang, Hamid Baseri, Mohamad Rajabi
6. Combining Adaptive Goal-Driven Agents with Mixed Multi-Unit Combinatorial Auctions
Alexander Tarvid
7. Towards a Security Evaluation Model based on Security Metrics
Jakub Breier, Ladislav Hudec
8. A Grammar-Free Visual Language-based Communication
Siska Fitrianie, Leon J. M. Rothkrantz

DISCUSSIONS

11:00 – 11:30

Coffee Break - Foyer

SECTION 2 - SESSION 2**Saturday 23th June 2012****11:30 – 13:15****Main building, Hall 114**

9. A genetic Algorithm Basic Approach for Software Management Project
Milena Karova, Nevena Avramova
10. Heuristic algorithms for a particular case of resource-constrained job-scheduling problem
Ivaylo Penev, Milena Karova, Stanislav Stoyanov
11. Multiple Encoding of a Watermark Number into Reducible Permutation Graphs using Cotrees
Maria Chroni, Stavros D. Nikolopoulos
12. Some Cryptanalysis of a p-ary Generalized Self-Shrinking Generator
Antoniya Tasheva
13. PRETO: A High-performance Text Mining Tool for Preprocessing Turkish Texts
Volkan Tunali, Turgay Tugay Bilgin
14. An Idea for a Type System of Multi-Paradigm Language with Extensible Syntax
Valeri Bogdanov
15. Spreadsheet-based Template Language Prototype for Tree Data Structure Description and Interpretation
Ilika Serafimova

DISCUSSIONS

Lunch

SECTION 3-A

Application Aspects of Computer Systems and Technologies

Chairs: **Robert Dabrowski**
Co-Chairs: **Georgi Todorov**
Scientific Secretaries: **Elitsa Arsova**

SECTION 3-A - SESSION 1

Saturday 23th June 2012

09:00 – 11:00

New building, Hall 104

1. Monitoring Java based SOA applications
Boyan Bonev, Sylvia Ilieva
2. Data oriented challenges of Service Architectures A Data Quality Perspective
Plamen Petkov, Markus Helfert
3. An Architectural Approach for Dynamic Web Service Composition
Dessislava Petrova-Antonova, Sylvia Ilieva
4. SOREGENE – a software reliability modelling tool
Maya Malakova, Aleksandar Dimov, Dimo Dimov
5. Modular Data Hiding for Improved Web-Portal Security
Svetozar Ilchev, Valeri Ilchev
6. A Framework for Design of Cloud Compatible Medical Interfaces
Maya Dimitrova, Siya Lozanova, Lubomir Lahtchev, Chavdar Roumenin
7. Content Interoperability between Digital Libraries for Orthodox Heritage
Maxim Goynov, Desislava Paneva-Marinova, Radoslav Pavlov
8. Improving Software Quality by Improving Architecture Management
Robert Dabrowski, Krzysztof Stencel, Grzegorz Timoszuk

DISCUSSIONS

11:00 – 11:30

Coffee Break - Foyer

SECTION 3-A - SESSION 2**Saturday 23th June 2012****11:30 – 13:30****New building, Hall 104**

9. Case Study - IPv6 based building automation solution integration into an IPv4 Network Service Provider infrastructure
Nikolay Milovanov, Ivan Bogomilov
10. Fractal and multifractal analysis of network teletraffic
Evgeniya Gospodinova, Mitko Gospodinov
11. Trusted Computing Architecture for Wi-Fi Protected Access 2 (WPA2) Optimization
Swati Sukhija, Shilpi Gupta
12. Using the Connectivity matrix for Finding Separated Routes of Information Exchange in Computer Networks
Boncho Aleksandrov, Petko Kochevski
13. A Simulation Study of the Throughput of a Crossbar Switch Node by Means of Periodic Input Patterns
Tasho Tashev, Vladimir Monov
14. An Algorithm of Non-conflict Schedule with Joint Diagonals Activation of Connectivity Matrix
Kiril Kolchakov, Tasho Tashev
15. Browser Extension-Based Man-in-the-Browser Attacks against Ajax Applications with Countermeasures
Sampsa Rauti, Ville Leppänen
16. An approach for indexing file names in a directory
Ivaylo Atanassov

DISCUSSIONS

Lunch

SECTION 3-B

Application Aspects of Computer Systems and Technologies

Chairs: **Virginio Cantoni**
Co-Chairs: **Tsvetozar Georgiev**
Scientific Secretaries: **Yuksel Aliev**

SECTION 3-B - SESSION 1

Saturday 23th June 2012

09:00 – 11:00

New building, Hall 105

1. Protein Structural Motifs Search in Protein Data Base
Virginio Cantoni, Alessio Ferone, Ozlem Ozbudak, Alfredo Petrosino
2. Identification of Deformations on Smooth Surfaces
Hristian Rusev, Ivan Buliev, Jordan Kolev
3. Automatic assessment of facial expressions using fiducial points
Ania Wojdel, Leon Rothkrantz
4. Automated safety control by video cameras
Iulia Lefter, Leon Rothkrantz and Maarten Somhorst
5. Simulation of Heart Rate Variability Data with Methods of Wavelet Transform
Galya Georgieva-Tsaneva, Mitko Gospodinov, Evgeniya Gospodinova
6. RSNAVI: An RFID-Based Context-Aware Indoor Navigation System for the Blind
Rosen Ivanov
7. A PRACTICAL APPROACH FOR AIRPORT SPATIAL MODELING
Apostol Panayotov, Iliya Georgiev, Ivo Georgiev
8. Reducer - A Tool to reduce redundant Disk I/O
Suhas Aggarwal

DISCUSSIONS

11:00 – 11:30

Coffee Break - Foyer

SECTION 3-B - SESSION 2**Saturday 23th June 2012****11:30 – 13:00****New building, Hall 105**

9. Investigation of the User's Text Reading Speed on Mobile Devices
Tsvetozar Georgiev
10. A Survey for Measuring Internet Anxiety Types
Santosh Kalwar, Kari Heikkinen, Jari Porras
11. From social networks to public sector services: a case study of citizen participation in real estate
Alenka Kern, Bojan Cestnik
12. An Empirical Model of Corporate Blog Impact in Marketing Communications
Silvestru Catalin Ionut, Nisioiu Codrin Florentin, Intorsureanu Iulian, Bere Ramona Camelia, Orzan Mihai Cristian, Dan Adina Maria
13. JobScan
Anuj Gupta, Leon Rothkrantz
14. Automatic Generation of SCORM Complaint Metadata for Portable Document Format Files
Antonio Maratea, Alfredo Petrosino, Mario Manzo

DISCUSSIONS

Lunch

SECTION 4

Educational Aspects of Computer Systems and Technologies

Chairs: **Margarita Todorova**

Co-chairs: **Kostadin Kratchanov**

Scientific Secretaries: **Tzanko Golemanov**

Saturday 23th June 2012

09:00 – 10:00

New building, Hall 107

1. Adaptive E-learning System Based on Accumulative Digital Activities in Revised Bloom's Taxonomy
Hristina Kostadinova, George Totkov, Hristo Indzhov
2. Exploiting Eye Tracking in Advanced E-Learning Systems
Virginio Cantoni, Calet Jimenez Perez, Marco Porta, Stefania Ricotti
3. Ontological Presentation of Analysis Method for Technology-enhanced Learning
Desislava Paneva-Marinova, Lilia Pavlova-Draganova, Lubomil Draganov, Vladimir Georgiev
4. Using Control Network Programming in Teaching Nondeterminism
Kostadin Kratchanov, Emilia Golemanova, Tzanko Golemanov, Burcu Külahçioğlu

DISCUSSIONS

11:00 – 11:30

Coffee Break - Foyer

SECTION 5**Mini-symposium on Astroinformatics**

Chair: **Milan Dimitrijević**

Co-chair: **Dimo Dimov**

Scientific Secretaries: **Ognyan Kounchev**

Saturday 23th June 2012

09:00 – 09:30

New building, Hall 108

1. Serbian Virtual Observatory
Darko Jevremović, Milan S. Dimitrijević, Luka Č. Popović, Andjelka Kovačević,, Veljko Vujičić, Vojislava Protić Benišek, Vladimir Benišek, Sylvie Sahal-Bréchet,, Katya Tsvetkova, Jovan Aleksić, Siniša Nešković, Zoran Simić, Miodrag Malović
2. Compressive Sensing for Polyharmonic Subdivision Wavelets With Applications to Image Analysis
Ognyan Kounchev, Damyan Kalaglarsky

DISCUSSIONS

11:00 – 11:30

Coffee Break - Foyer

SECTION 6

The youth and the ICT

Chair: **Peter Kenderov**
Co-chair: **Emil Kelevedjiev**
Scientific Secretaries: **Galina Ivanova**

Saturday 23th June 2012
09:30 – 10:30
New building, Hall 108

1. Algorithms and usage of bipartite graphs
Rali Ralev
2. Relate2Spot
Ivan Stefanov, Dimitar Vouldjeff
3. Comparison and Analysis of Traffic Lights Control Systems
Momchil Peychev
4. Don't be angry
Atanas Atanasov, Vasil Vodenicharov
Leader of the students: Suzan Feimova

Saturday 23th June 2012

13:30

New building, 2.101

**The CHAIRS
of the PROGRAMME COMMITTEE and the ORGANIZING COMMITTEE
will bestow
a CRYSTAL PRIZE
to the authors of the best papers.**



Saturday 23th June 2012

14:00

New building, 2.101

**Meeting
of the PROGRAMME COMMITTEE and ORGANIZING COMMITTEE
and the chairs of each sections
of the CompSysTech'12**