UNIVERSITY of RUSE
8 STUDENTSKA STR.

The new building

The main building
Dear Participants,

You can use free WIRELESS INTERNET via access points named CompSys with password compsys.

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’14 International Conference is organized by THE ASSOCIATION FOR COMPUTING MACHINERY 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’14 is organized under the patronage of:
- EUROPEAN COMMISSION - Education, Audiovisual and Culture Executive Agency;
- Bulgarian Ministry of Education and Science;
- Bulgarian Academy of Sciences;
- Bulgarian Chapter of IEEE Computer Society;
- Bulgarian Chapter of IEEE Communications Society

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  Danail Dochev (Bulgaria)  
  Daniela Chuda (Slovakia)  
  Diana Kalibatienė (Lithuania)  
  Dieter Wutke (Germany)  
  Dimitris Karagiannis (Austria)  
  Douglas Harms (United States)  
  Erika Asnina (Latvia)  
  George Totkov (Bulgaria)  
  Georgi Todorov (Bulgaria)  
  Georgi Glihchev (Bulgaria)  
  Grisha Spasov (Bulgaria)  
  Gundars Alksnis (Latvia)  
  Hannu Jaakkola (Finland)  
  Hilda Tellioglu (Austria)  
  Howard Duncan (Ireland)  
  Iliya Georgiev (United States)  
  Ivan Jelinek (Czech Republic)  
  Janusz Jabłonowski (Poland)  
  Jaroslav Pokorny (Czech Republic)  
  Jiri Srba (Denmark)  
  Jordan Kolev (Bulgaria)  
  Jouni Ikonen (Finland)  
  Juliana Peneva (Bulgaria)  
  Karl Jones (United Kingdom)  
  Kostadin Kratchanov (Turkey)  
  Krassen Stefanov (Bulgaria)  
  Ladislav Hudec (Slovakia)  
  Leon Rothkrantz (Netherlands)  
  Leoneed Kirilov (Bulgaria)  
  Leonid Rozenblyum (United States)  
  Lidiya Georgieva (Bulgaria)  
  Lucila Santarosa (Brazil)  
  Marco Porta (Italy)  
  Margarita Todorova (Bulgaria)  
  Maria Jose Marcelino (Portugal)  
  Martin Llamas-Nistal (Spain)  
  Michael Vassilakopoulos (Greece)
Mirjana Ivanovic (Serbia)  Rebecca Bartlett (United Kingdom)
Neli Maneva (Bulgaria)    Stavros Nikolopoulos (Greece)
Nicole Levy (France)      Stoicho Stoichev (Bulgaria)
Olegas Vasilecas (Lithuania)  Tanja Urbančič (Slovenia)
Pavol Navrat (Slovakia)    Timos Sellis (Australia)
Peter Stanchev (United States)  Tzvetomir Vassilev (Bulgaria)
Radi Romansky (Bulgaria)   Ville Leppänen (Finland)
Radu Dobrin (Sweden)       Yannis Manolopoulos (Greece)

♦ NATIONAL ORGANIZING COMMITTEE

- Co-Chairs:
  Angel Smrikarov, Prof., Ph.D. (Bulgaria)
  Tzvetozar Georgiev, Assoc. Prof., Ph.D. (Bulgaria)

- Secretary:
  Eugenia Dimitrova (Bulgaria)

- Members:
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  Margarita Teodosieva (Bulgaria)   Grisha Spasov (Bulgaria)
  Katalina Grigorova (Bulgaria)     Nadejda Ruskova (Bulgaria)
  Jordan Kalmukov (Bulgaria)        Margarita Todorova (Bulgaria)
  Lina Georgieva (Bulgaria)         Raicho I larionov (Bulgaria)
  Boyanka Zhelyazova (Bulgaria)

♦ TOPICS

2. Computer Systems (Software).
4. Educational Aspects of Computer Systems and Technologies
   (Distance learning).
3. The youth and the ICT
   - High-School Students’ Section;
   - Students’ Section;
   - PhD Students’ Section

CompSysTech’14 Co-Event –
Workshop „Advances in high performance services for digital, multilingual education (AHPISDME)“
Friday, 27th June 2014

08:00 – 18:00
In the new building, Hall 2.109
REGISTRATION

09:30
New building, Hall 2.101

OPENING

WELCOME
Chair: Angel Smrikarov

STRING QUARTET „CHERKIN”
AT THE STATE OPERA RUSE
PLENARY SESSION
Chair: Boris Rachev

VIRGINIO CANTONI
University of Pavia, Italy
Lecture on:
Eye-tracking systems, research and applications

ATANAS RADENSKI
Chapman University, California, USA
Lecture on:
Big Data, High-Performance Computing and MapReduce

HANNU JAAKKOLA
Tampere University of Technology, Finland
Lecture on:
Open Data – Opportunities and Challenges

INDUSTRIAL SESSION

ELENA MARINova
President Musala Soft, BAIT Board member and Chair of Committee “Education”
Lecture on:
The top challenges of the software business today - quality and quantity of people. How can business and universities work it out together?

DISCUSSIONS
12:00 – 13:30
Lunch
# PROGRAMME SUMMARY

<table>
<thead>
<tr>
<th>Time</th>
<th>Session A</th>
<th>Session B</th>
<th>Session C</th>
<th>Session D</th>
<th>Session E</th>
<th>Session F</th>
<th>Session G1</th>
<th>Session G2</th>
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<tbody>
<tr>
<td>15:30</td>
<td><strong>Hardware</strong></td>
<td><strong>Image Processing &amp; Computer Vision</strong></td>
<td><strong>Data Mining, Information Retrieval &amp; Natural Language Processing</strong></td>
<td><strong>Simulation and Modelling, Statistical Analysis, Intelligent Systems</strong></td>
<td><strong>Web Services and Cloud Computing</strong></td>
<td><strong>Software Engineering</strong></td>
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<td><strong>Workshop AHPISDME</strong></td>
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Session A

Chair: Pino Caballero-Gil
Co-Chair: Delyan Genkov
Scientific Secretary: Rumen Kojuharov

Friday, 27th June 2014
13:30 – 15:30
New building, Hall 104

HARDWARE

1. Design Space Exploration in Multi-level Computing Systems
   Valery Sklyarov, Ioulia Skliarova, Joao Silva, Alexander Sudnitson
2. Evaluating the performance of unified or split caches with simulation tools
   Penka Avdjieva, Maria Marinova, Vladimir Lazarov
3. IP Design for DIF and Integration in Nios II Systems: Averaging Filter
   Trifon Trifonov
4. Two-Phase Routing in Three-Dimensional Blocked Optical Tori
   Risto Honkanen, Ville Leppanen

COMPUTER NETWORKS

1. Tree-Based Revocation for Authentication in Vehicular Ad-hoc Networks
   Francisco Martin-Fernandez, Pino Caballero-Gil, Candido Caballero-Gil
2. Monitoring Software for IP based Video Surveillance System
   Delyan Genkov
3. “SILICON GALAXY” System Area Network for Collective Communication in Supercomputers
   Plamenka Borovska, Desislava Ivanova
4. Computer Simulations of a Modified MiMa-algorithm for a Crossbar Packet Switch
   Tasho Tashev, Vladimir Monov

DISCUSSIONS

15:30 – 16:00
Coffee Break - Foyer
Session B

Chair: Leon Rothkrantz
Co-Chair: Dimo Dimov
Scientific Secretary: Julia Zlateva

Friday, 27th June 2014
16:00 – 17:15
New building, Hall 104

IMAGE PROCESSING & COMPUTER VISION

1. A Digital Watermarking Scheme for Image Tamper Detection
   Zlatoliliya Ilcheva, Nikodim Lazarov

2. Correlation-based Steganalysis of Modular Data Hiding Methods
   Svetozar Ilchev, Zlatoliliya Ilcheva

3. Online Emotional Facial Expression Dictionary
   Leon Rothkrantz

4. Real Time Video Stabilization for Handheld Devices
   Dimo Dimov, Atanas Nickolov

5. Virtual Co-location to Support Remote Assistance for Inflight Maintenance in Ground Training for Space Missions
   Dragos Datcu, Marina Cidota, Stephan Lukosch, David Martinez Oliveira, Mikael Wolff

DISCUSSIONS
Session C

Chair: Daniela Chudá  
Co-Chair: Irena Valova  
Scientific Secretary: Jordan Kalmukov

Friday, 27th June 2014  
13:30 – 15:30  
New building, Hall 105

DATA MINING, INFORMATION RETRIEVAL &  
NATURAL LANGUAGE PROCESSING

1. Similarity Detection among Longer Texts by Matching Keywords Found in Segments  
   Tomáš Kučečka, Daniela Chudá

2. A web search methodology for health consumers  
   Marco Alfano, Biagio Lenzitti, Giosuè Lo Bosco

3. Predicting Newspaper Sales by Using Data Mining Techniques  
   Barış Akbaş, Dilek Karahoca, Adem Karahoca, Ali Güngör

4. A machine learning approach for identifying zero pronouns in Bulgarian  
   Diana Grigorova

5. Modelling of the musical taste using semantic network for recommendation systems  
   Dmitry Dolgikh, Ivan Jelínek

6. The opportunity of using eSpeak as Text-to-Speech synthesizer for Albanian Language  
   Ramiz Kastrati, Mentor Hamiti, Lejla Abazi

7. Text Mining and Social Network Analysis on Computer Science and Engineering Theses in Turkey  
   Volkan Tunali, Turgay Tugay Bilgin

8. Design and Analysis of Novel Similarity Measure for Clustering and Classification of High Dimensional Text Documents  
   G.Suresh Reddy, Ananda Rao, Rajani Kanth

DISCUSSIONS

15:30 – 16:00  
Coffee Break - Foyer
Session D

Chair: Olegas Vasilecas  
Co-Chair: Tzvetozar Georgiev  
Scientific Secretary: Biser Nikolov

Friday, 27th June 2014  
16:00 – 17:45  
New building, Hall 105

SIMULATION AND MODELLING. STATISTICAL ANALYSIS. INTELLIGENT SYSTEMS

1. Intraday Stock Forecasting  
   Victor Louwerse, Leon Rothkrantz

2. An Extension of Flexible Job Shop Problem (FJSP) and Method for Solving  
   Leoneed Kirilov, Vassil Guliashki

3. Usage of computer mouse characteristics for identification in web browsing  
   Daniela Chuda, Peter Kratky

4. Bayesian belief network application in process mining  
   Titas Savickas, Olegas Vasilecas

5. A Customised Metric for Foods Categorization  
   Ivo Marinchev, Gennady Agre

6. Early concept of classification test and contemporary approach to diagnostic test and combinatorial test  
   Vesela Angelova

7. Decentralised Control Optimisation for a Glass Furnace by SGA’s  
   Kumaran Rajarathinam, J. Barry Gomm, Karl Jones, Ahmed Saad Abdelhadi

DISCUSSIONS
Session E

Chair: Adina Uta
Co-Chair: Aleksandar Dimov
Scientific Secretary: Nikolai Kostadinov

Friday, 27th June 2014
13:30 – 14:45
New building, Hall 113

WEB SERVICES & CLOUD COMPUTING

1. RecSS: Automation of QoS-Aware Web Service Selection
   Dessislava Petrova-Antonova, Nadezhda Hristova, Olga Georgieva

2. Web service QoS specification in BPEL descriptions
   Krasimir Baylov, Dessislava Petrova-Antonova, Aleksandar Dimov

   Xhemal Zenuni, Jaumin Ajdari, Florije Ismaili, Bujar Raufi

4. Security of Virtual Entities
   Adina Uta, Ion Ivan, Marius Popa, Cristian Ciurea, Mihai Doinea

5. Towards a diversification framework for operating system protection
   Sampsa Rauti, Johannes Holvitie, Ville Leppänen

DISCUSSIONS

15:30 – 16:00
Coffee Break - Foyer
Session F

Chair: Jouni Ikonen  
Co-Chair: Georgi Georgiev  
Scientific Secretary: Georgi Teodorov

Friday, 27th June 2014  
16:00 – 17:30  
New building, Hall 113

SOFTWARE ENGINEERING

1. Automated Testing in the Czech Republic: The Current Situation and Issues  
Miroslav Bures

2. Reducing user input validation code in web applications using Pex extension  
Karel Frajták, Miroslav Bureš, Ivan Jelinek

3. Designing a user interface for game developers to enter game specific information  
Nikolaos Paraschou, Jouni Ikonen, Kari Heikkinen, Janne Parkkila

4. Can virtual reality be better controlled by a smart phone than by a mouse and a keyboard?  
Alena Kovárová, Maroš Urbančok

5. A Methodology for Automated Evaluation of Projects Quality  
Rositsa Doneva, Silvia Gaftandzhieva

6. Customer-Oriented Change Management for ERP Systems  
Erika Asnina, Mara Pudane, Marika Svihe, Gundars Alksnis

DISCUSSIONS
Session G1

Chair: António José Mendes
Co-Chair: Galina Ivanova
Scientific Secretary: Elena Diankova

Friday, 27th June 2014
13:30 – 15:30
New building, Hall 114

WORKSHOP
"Advances in high performance services for digital, multilingual education" (AHPISDME)

1. Online Programming Exercises for Summative Assessment in University Courses
   Pavol Navrat, Jozef Tvarozek

2. Increasing the Flexibility of Automated Concept Map Based Knowledge Assessment
   Maija Strautmane

3. A 3D Model for Adaptive Multi-Lingual Online Assessment
   Margarita Todorova, Oleg Asenov, Donika Valcheva

4. Student Evaluation by Graph Based Data Mining of Administrational Systems of Education
   András London, Tamás Németh

5. Increasing Collaborative Communications in a Programming Course with Gamification: A Case Study
   Antti Knutas, Jouni Ikonen, Uolevi Nikula, Jari Porras

6. Creating Software Engineering Student Interaction Profiles for Discovering Gamification Approaches to Improve Collaboration
   Antti Knutas, Jouni Ikonen, Dario Maggiorini, Laura Ripamonti, Jari Porras

7. The Distance Learning course on Computer Networks at the University of Coimbra
   João Costa e Silva, Sandra Pedrosa, Maria José Marcelino,
   António José Mendes, Fernando Boavida, Mário Bernardes

8. Teaching in Balkan Countries – Multilingual and Multicultural Approach
   Zoran Putnik, Mirjana Ivanovic, Zoran Budimac, Klaus Bothe, Hans-Dieter Burkhard

DISCUSSIONS

15:30 – 16:00
Coffee Break - Foyer
Session G2

Chair: Tanja Urbančič  
Co-Chair: Vladimir Mateev  
Scientific Secretary: Orlin Tomov

Friday, 27th June 2014  
16:00 – 18:00  
New building, Hall 114

WORKSHOP  
"Advances in high performance services for digital, multilingual education"  
(AHPISDME)

9. Academic dishonesty in a partially online environment: A survey  
   Danijela Subotic, Patrizia Poscic

10. What Can VideoLectures.Net and transLectures Do for Opening Higher  
    Education to the Multicultural World  
   Davor Orlič, Bojan Cestnik, Tanja Urbančič

11. Automatized Test Item Generation in Moodle  
    Mariyana Raykova, Hristina Kostadinova, George Totkov

12. Online students in 2014  
    Ásrún Matthíasdóttir

13. Multilingual information delivery based on a domain ontology  
    Nauris Paulins, Irina Arhipova, Signe Balina

14. TeachMe: Personal Learning Environment for Children  
    Rosen Ivanov

15. An Interactive Technology to Support Education of Children With Hearing  
    Problems  
    Alexander Krastev, Anna Lekova, Maya Dimitrova, Ivan Chavdarov

16. Version Control Usage in Students’ Software Development Projects  
    Pekka Mäkiaho, Timo Poranen, Ari Seppi

17. Approach for Integration of the Methods of the Network Analysis in the  
    Field of Distance and Electronic Education  
    Radoslav Milchev, Galin Milchev, Ivan Manchev

DISCUSSIONS
Session H

Chair: Peter Kenderov
Co-Chair: Anelia Ivanova
Scientific Secretary: Syuzan Feimova

Friday, 27th June 2014
13:30 – 14:45
New building, Hall 2.107

THE YOUTH AND THE ICT

1. Home automation using Raspberry Pi
   Vladimir Mutafov

2. Dynamic Road Conditioning Network
   Hristo Staykov

3. Cells' Evolution.
   Emil Indjev, Syuzan Feimova

   Marin Shalamanov, Vasil Vasilev

5. Application development to protect the computer system from malicious code
   Stefan Tafkov

DISCUSSIONS

15:30 – 16:00
Coffee Break - Foyer
Friday, 27th June 2014
18:00
New building, Hall 2.101

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

Friday, 27th June 2014
18:30
New building, Hall 2.101

Meeting
of the PROGRAMME COMMITTEE and ORGANIZING COMMITTEE
and the chairs of each sections
of the CompSysTech’14
19:30
SOCIAL EVENING IN THE RESTAURANT “RIGA”
22 PRIDUNAVSKI BLVD
2 floor
Paintings from RUSE