Dear Participants,

University of Ruse is a member of Eduroam world project and if your University/Organization is a member too, you can use your credentials to access internet via our wireless network.

You can also use free WIRELESS INTERNET via access points named **CompSys** with password **compsy18**.

You can also use the COMPUTERS in the Centre for PhD students - main building, in the middle of the 3 floor 1.411-4.
CONFERENCE OBJECTIVE

The CompSysTech’18 International Conference is organized by the Association for Computing Machinery, N.Y., USA via its Bulgarian Chapter – acmbul 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 the field.

CompSysTech’18 is organized under the patronage of:
- Bulgarian Ministry of Education and Science;
- John Atanasoff Union of Automation and Informatics

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  Maria Jose Marcelino (Portugal)  
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• Secretary:
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• Members:
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  Galina Ivanova (Bulgaria)
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♦ TOPICS

1. Computer Hardware.
2. Computer Software.
3. Application Aspects
   of Computer Systems and Technologies.
4. Educational Aspects
   of Computer Systems and Technologies
   (ICT-based educational technologies).
5. The Youth and the Computer Systems and Technologies
   • PhD Students’ Section;
   • Students’ Section;
   • High-School Students’ Section.
Thursday, 13th September 2018

08:00 – 18:00
New building, Hall 2Γ.207
REGISTRATION

Demonstration of humanoid robots

15:00
New building, Hall 2Γ.204 SIEMENS

OPENING

WELCOME
Chair: Angel Smrikarov

MUSICAL GREETING
PLENARY SESSION
Chair: Boris Rachev

ELENA MARINOA
Musala Soft, Bulgaria
Keynote on:
Internet of Everything - what awaits us?

NIKOLA KASABOV
Knowledge Engineering and Discovery Research Institute, Auckland, New Zealand
First Prize of International Neural Network Society
Keynote on:
Deep Learning in Spiking Neural Networks for Brain-Inspired Artificial Intelligence

PETER STANCHEV
Kettering University, USA
Keynote on:
Building the Innovative and Entrepreneurial University

DISCUSSIONS

17:00
Walking tour of the University of Ruse
Visiting the multimedia museum of the University of Ruse
Thursday, 13th September 2018
19:30
SOCIAL EVENING IN THE RESTAURANT “RIGA”
22 PRIDUNAVSKI BLVD
2 floor
# PROGRAMME SUMMARY

**Friday, 14th September 2018**

<table>
<thead>
<tr>
<th>Time</th>
<th>Hall 2.205</th>
<th>Hall 2.206</th>
<th>Hall 2.207</th>
</tr>
</thead>
</table>
| 9:00 – 11:30    | **Session A1**  
Artificial Intelligence and Information Retrieval (1)  
Number of papers: 8 | **Session B**  
Information Systems  
Number of papers: 4  
Cloud Computing  
Number of papers: 2 | **Session D**  
Educational Aspects of Computer Systems and Technologies (ICT-based Educational Technologies)  
Number of papers: 6 |
| 11:30 – 12:00   | **COFFEE BREAK** |                                                |                                                |
| 12:00 – 14:00   | **Session A2**  
Artificial Intelligence and Information Retrieval (2)  
Number of papers: 2  
Image Processing and Computer Vision  
Number of papers: 3 | **Session C**  
Computer Applications in Engineering and Medicine  
Number of papers: 3  
Digital Signal Processing  
Number of papers: 2  
Hardware  
Number of papers: 1 | **Session E**  
The Youth and the ICT  
Number of papers: 2 |
| 14:00 – 14:30   | **THE BEST PAPERS AWARDS** |                                                |                                                |
ARTIFICIAL INTELLIGENCE AND INFORMATION RETRIEVAL (1)

1. Improving the Performance of Unitary Recurrent Neural Networks and Their Application in Real-life Tasks
   Ivan Ivanov, Li Jing, Rumen Dangovski

2. An Overview of Local Approach for Time Series Analysis and Prediction
   Ventsislav Nikolov

3. Hybrid dynamic route planners
   Leon Rothkrantz

4. A Graph-based Model for Malicious Software Detection Exploiting Domination Relations between System-call Groups
   Anna Mpanti, Stavros D. Nikolopoulos, Iosif Polenakis

5. Neighborhood-based Strategies for Widening of the Greedy Algorithm of the Set Cover Problem
   Violeta Nikolaeva Ivanova-Rohling

6. Communication-less Strategies for the Widening of Rule Induction
   Violeta Nikolaeva Ivanova-Rohling

7. Virtual Intelligent Personal Assistant for Bat Researchers
   Angel Ivanov, Daniela Orozova

8. Using Big Data Value Chain to Create Government Education Policies
   Dessislava Petrova-Antonova, Sylvia Ilieva

DISCUSSIONS

11:30 – 12:00
2.203
Coffee Break
SESSION A2

Chair: Daniela Chuda
Co-Chair: Tsvetozar Georgiev
Scientific Secretary: Vladimir Dochev

Friday, 14th September 2018
12:00 – 14:00
New building, Hall 2.205

ARTIFICIAL INTELLIGENCE AND INFORMATION RETRIEVAL (2)

1. Cross lingual and multilingual ontology mapping - survey
   Tatyana Ivanova

2. Source code authorship approaches natural language processing
   Juraj Petrík, Daniela Chuda

IMAGE PROCESSING AND COMPUTER VISION

1. An Algorithm for Histogram Median Thresholding
   Atanaska Bosakova-Ardenska, Angel Danev

2. Bread porosity evaluation by histogram analysis
   Atanaska Bosakova-Ardenska, Angel Danev, Hristina Andreeva, Tzvetana Gogova

   Segmentation of Traffic Stereo-Pair Images
   Vlad Taran, Nikita Gordienko, Yuriy Kochura, Yuri Gordienko, Alexandr Rokovyi,
   Oleg Alienin, Sergii Stirenko

DISCUSSIONS

14:00
Hall 2Γ.204 Siemens
THE BEST PAPERS AWARDS
Session B

Chair: Ville Leppänen
Co-Chair: Tzvetomir Vassilev
Scientific Secretary: Jordan Kalmukov

Friday, 14th September 2018
9:00 – 11:30
New building, Hall 2.206

INFORMATION SYSTEMS

1. Investigation of Higher Education ERP implementation factors
   Blerta Abazi Chaushi, Agron Chaushi, Zamir Dika, Florije Ismaili

2. Development and Practical Use of a Medical Vocabulary-Thesaurus-Dictionary for Patient Empowerment
   Marco Alfano, Biagio Lenzitti, Giosuè Lo Bosco, Davide Taibi

3. Web Technologies Used in the Commercial Banks in Finland
   Pavel Petrov, Stefan Krumovich, Nikola Nikolov, Georgi Dimitrov, Vladimir Sulov

4. A Study on Gaze-Controlled PIN Input with Biometric Data Analysis
   Virginio Cantoni, Tomas Lacovara, Marco Porta, Haochen Wang

CLOUD COMPUTING

1. Virtual Machine Introspection based Cloud Monitoring Platform
   Samuel Laurén, Ville Leppänen

2. Big Data Technologies on Commodity Workstations. A Basic Setup for Apache Impala
   Marin Fotache, Valerică Greavu-Șerban, Ionuț Hrubaru, Alexandru Tică

DISCUSSIONS

11:30 – 12:00
2.203
Coffee Break
Session C

Chair: Virginio Cantoni
Co-Chair: Tzvetomir Vassilev
Scientific Secretary: Jordan Kalmukov

Friday, 14th September 2018
12:00 – 14:00
New building, Hall 2.206

COMPUTER APPLICATIONS
IN ENGINEERING AND MEDICINE

1. Manipulability and Kinematic Dependences of the Six-Legged Robot Legs
   Ivan Chavdarov, Roumen Trifonov, Galya Pavlova, Dilyana Budakova

2. Software tools for mechanical structures resonant frequencies determination
   Svetlin Stoyanov

3. Visualization of Simulated Arrhythmias due to Gap Junctions
   Antonio Ienna, Michele Migliore, Cesare Valenti

DIGITAL SIGNAL PROCESSING

1. Digital Processing of Two-Dimensional Signals in the Basis of Haar Wavelets
   H.N. Zaynidinov, M.B. Zaynutdinova, E.Sh. Nazirova

2. Heart Rate Variability Generating Based on Matematical Tools
   Galya Georgieva-Tsaneva

HARDWARE

1. Hardware Divider
   Dimitar Tyanev, Yulka Petkova

DISCUSSIONS

14:00
Hall 2Г.204 SIEMENS
THE BEST PAPERS AWARDS
EDUCATIONAL ASPECTS OF COMPUTER SYSTEMS AND TECHNOLOGIES
(ICT-based Educational Technologies)

1. Integration of MOOCs in Regular Courses
   Leon Rothkrantz

2. Matlab-based Software Tool for Implementation of Digrafid Ciphers Using a Modified Algorithm With 64-Symbol Alphabet
   Adriana Borodzhieva, Plamen Manoilov

3. Risks management in software development capstone projects
   Pekka Mäkiaho, Timo Poranen

4. Iconic framework for cooperative coding
   Guido Averna, Biagio Lenzitti, Davide Taibi, Domenico Tegolo

5. Computer vision and Internet of Things: Attention System in educational context
   Teodor Savov, Valentina Terzieva, Katia Todorova

6. Robotic Interaction for Assistance to Autistic Children
   Manolo Dulva Hina, Assia Soukane, Amar Ramdane-Cherif, Galina Ivanova

DISCUSSIONS

11:30 – 12:00
2.203
Coffee Break
Session E

Chair: Amar Ramdane-Cherif
Co-Chair: Galina Ivanova
Scientific Secretary: Yuksel Aliev

Friday, 14th September 2018
12:00 – 14:00
New building, Hall 2.207

THE YOUTH AND THE ICT

1. Science Clash
    Viktor Toporov, Kristian Spasov, Syuzan Feimova

2. Innovative rehabilitator for children with moving problems
    Monika Velikova, Selin Shemsieva, Syuzan Feimova

DISCUSSIONS

14:00
Hall 2Г.204 SIEMENS
THE BEST PAPERS AWARDS
Friday, 14th September 2018
14:00
New building, Hall 2G.204 SIEMENS

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

RUSE - CENTRE

UNIVERSITY OF RUSE