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Conference Co-Chairmen

Anatoliy Sachenko,  
Research Institute for Intelligent  
Computer Systems,  
Ternopil National Economic University,  
Ternopil, Ukraine

Kondo H. Adjallah,  
Ecole Nationale d’Ingénieurs de  
Metz, Laboratory of Conception, Optimisation and Modelling of Systems,  
University of Lorraine, Metz, France

International Program Committee Co-Chairmen

Francesca Guerriero  
Department of Mechanical, Energy and Management Engineering, University of Calabria, Italy

Carsten Wolff  
Institute for the Digital Transformation of Application and Living Environments, University of Applied Sciences and Arts, Dortmund, Germany
Message from the IDAACS 2019 Co-Chairmen

It’s our pleasure to welcome all attendees the 2019 IEEE 10th International Conference on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications (IDAACS), www.idaacs.net, which will be held in Metz, France, 18-21 September, 2019.

The main goal of IDAACS’2019 is to provide a forum for high-quality reports on the state-of-the-art Theory, Technology and Applications of Intelligent Data Acquisition and Advanced Computer Systems as used in different areas. A family of IDAACS Workshops has already been created since the IEEE 1st IDAACS Workshop was held in Foros, Crimea, Ukraine, July 1-4, 2001. After that the following IDAACS Conferences were held in Lviv, Ukraine, 2003, Sofia, Bulgaria, 2005, Dortmund, Germany, 2007, Rende (Cosenza), Italy, 2009, Prague, Czech Republic, 2011, Berlin, Germany, 2013, Warsaw, Poland, 2015, Bucharest, Romania, 2017. Moreover, IDAACS Symposia on Wireless Systems (SWS) were held in Offenburg, Germany in 2012, 2014, 2016 as well as in Lviv, Ukraine in 2018.

The IDAACS 2019 Conference is organized by IEEE Ukraine Section I&M / CI Joint Societies Chapter and the Research Institute for Intelligent Computer Systems, Ternopil National Economic University (TNEU) and V.M. Glushkov Institute of Cybernetics, National Academy of Sciences, Ukraine in cooperation with the ENIM (Ecole Nationale d’Ingénieurs de Metz) and LCOMS (Laboratory of Conception, Optimisation and Modelling of Systems) of University of Lorraine, France.

It is supported and sponsored by IEEE Ukraine Section, IEEE France Section, MDPI Sensors, Fondation ENIM, Metz Metropole, River Publishers, so we express our sincere gratitude to each of them.

The International Program Committee of IDAACS’2019 is co-chaired by Francesca Guerriero, Italy and Carsten Wolff, Germany, many thanks to both of them. In addition, we express our gratitude for all members of IPC. There were submitted the 314 papers by authors from the 42 countries. Many thanks to all the reviewers, their names are listed in the proceedings and their contribution to the quality and success of this Conference. After the reviewing process, the 213 papers were accepted for a publication in the Conference proceedings. All the presentations are organized into the 27 oral and the 3 poster sessions. In addition, three prominent experts are invited to deliver keynotes during plenary sessions: Jürgen Sieck, University of Applied Sciences, Berlin, Germany; Kourosh Madani, Paris-Est Créteil Val-de-Marne University, France; and Fabio Scotti, University of Milan, Italy. We appreciate their contribution to the IDAACS 2019 Conference very much.

Besides, the IDAACS 2019 remained its peculiarity providing seven special streams, and Workshops on Cyber Physical Systems and Internet of Things with 11 sessions.

Metz is the economic heart of the Lorraine region, it’s home to the University of Lorraine. The university has over 60000 students, close to 6900 staff members, among which 3700 faculty and searchers, 43 teaching departments, 60 research centers, and several campuses in the entire region. Several important universities are mentioned such as the Pole Universitaire European de Nancy Metz, Georgia Tech Lorraine, Ecole Nationale d’Ingénieurs de Metz (ENIM). The city economy relies on the sectors of commerce, tourism, information technology, and the metallurgical and automotive industries. The city is a center for applied research and development in the materials sector, notably in metallurgy and metallography.

Lastly, we would like to thank all our friends and colleagues from the previous IDAACS’ conferences as well as new participants coming in Metz to discuss the latest achievements in the fields of Intelligent Data Acquisition and Advanced Computer Systems!

Enjoy attending the IDAACS’19 conference and the charm city of Metz!

Anatoliy Sachenko

Kondo H. Adjallah
IDAACS’2019 Conference Committee

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Imed Kacem, France
Andriy Krysovatyy, Ukraine
Pierre Mutzenhardt, France
Alexandr Palagin, Ukraine

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Wieslaw Winiecki, Poland

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Kondo H. Adjallah, France

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Carsten Wolff, Germany

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George Markowsky, USA
Igor Kotenko, Russian Federation

Coordinators of the Special Stream in Machine Learning
Yevgeniy Bodyanskiy, Ukraine
Eduard Petlenkov, Estonia

Coordinators of the Special Stream in Wireless Systems
Axel Sikora, Germany
Uwe Grossmann, Germany

Coordinators of the Special Stream in Project Management
Carsten Wolff, Germany
Jose Ramon Otegi-Olaso, Spain

Coordinators of the Special Stream in Smart Buildings and Smart Cities
Dan Popescu, Romania
Grigore Stamatescu, Romania

Coordinators of the Special Stream in Human-Machine Interaction (in Education)
Peter Arras, Belgium
Galina Tabunshchyk, Ukraine

Coordinator of the Workshop Cyber Physical Systems and Internet of Things
Vyacheslav Kharchenko, Ukraine
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Andrii Golovynskyi, Ukraine
Vladimir Jotsov, Bulgaria
Jan Jürjens, Germany
John Kalomiros, Greece
Mikolaj Karpinski, Poland
Rao Aamir Ali Khan, Pakistan
Vyacheslav Kharchenko, Ukraine
Volodymyr Kindratenko, USA
Mykhailo Klymash, Ukraine
Vitaly Klyuev, Japan
Volodymyr Kochan, Ukraine
Yury Kolokolov, Russia
Yuriy Kondratenko, Ukraine
Ah Lian Kor, Malaysia
Igor Kotenko, Russia
Nataliia Kussul, Ukraine
Alexander Kuznetsov, Ukraine
Miroslav Kvassay, Slovak Republic
Oleksandr Letychevskyi, Ukraine
Arūnas Lipnickas, Lithuania
Volodymyr Lytvynenko, Ukraine
Leonid Lyubchyk, Ukraine
Choubeila Maaooui, France
Kurosh Madani, France
Dmitry Maevsky, Ukraine
Volodymyr Maksumovych, Ukraine
Taras Maksymyuk, Ukraine
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Linda Markowsky, USA
Anna Monovskaya, Russia
Vadim Mukhin, Ukraine
Jiří Novák, Czech Republic
Oleksandr Sudakov, Ukraine
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Volodymyr Opanasenko, Ukraine
Oleksander Palagit, Ukraine
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Miki Sirola, Finland
Inna Skarga-Bandurova, Ukraine
Radislav Smid, Czech Republic
Seweryn Spalek, Poland
Grigore Stamatescu, Romania
Iulia Stamatescu, Romania
Sergey Subbotin, Ukraine
Linas Svilainis, Lithuania
Galya Tabunshchik, Ukraine
Camel Tanougast, France
Volodymyr Turchenko, Canada
Wolfgang Tysiak, Germany
Jose Luis Vazquez-Poletti, Spain
Stavros Vologiannis, Greece
John Vourvoulakis, Greece
Benoit Vozel, France
Wieslaw Winiecki, Poland
Carsten Wolff, Germany
Heinz-Dietrich Wuttke, Germany
Vasyl Yatsky, Ukraine
Sergey Yurish, Spain
Janusz Zalewski, USA

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Pavlo Bykovyy, Ukraine
Taras Lendyuk, Ukraine
Svitlana Sachenko, Ukraine
Oleksandr Osolinskiy, Ukraine
Iryna Turchenko, Ukraine
Halyna Kryva, Ukraine
Vitaliy Dorosh, Ukraine
Ivan Kit, Ukraine
Camel Tanougast, France
Choubeila Maaooui, France
Imed Kacem, France
Alexandre Sava, France
Harry Ramenah, France
Camille Diou, France
Celine Salomon, France
Caroline Cappella, France
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
</table>
| **Wednesday, September 18, 2019** | **Hall of lobby**  
Registration and Welcoming Reception Party |
| 6:00 PM – 8:00 PM | **Hall of lobby**  
Registration |  
Welcome Coffee |
| 8:00 AM – 8:20 AM | Room A (Auditorium)  
Opening |  
Room A (Auditorium)  
Plenary Session T1  
Jürgen Sieck “Augmented and Virtual Reality Applications for Culture and Tourism”  
Chair: Anatoliy Sachenko |
| 9:10 AM – 10:50 AM | Room A Session TA1:  
1. Advanced Instrumentation and Data Acquisition Systems  
Co-Chairs: Peter Schulz, Piotr Bilski |  
Room B Session TB1:  
7. Data Analysis and Modeling  
Chair: Miki Sirola |  
Room C Session TC1:  
15. Pattern Recognition, Digital Image and Signal Processing  
Co-Chairs: Ivo Draganov, Aleksander Doudkin |  
Room D Session TD1:  
19. Special Stream in Cyber Security  
Co-Chairs: George Markowsky, Igor Kotenko |
| 10:50 AM – 11:10 AM | **Hall of lobby**  
Coffee Break |  
Room A Session TA2:  
2. Advanced Mathematical Methods for Data Acquisition and Computing Systems  
Chair: Leonid Lyubchyk |  
Room B Session TB2:  
10. Information Computing Systems for Education and Commercial Applications  
Chair: Sergii Telenyky |  
Room C Session TC2:  
28. Special Stream in Wireless Systems  
Co-Chairs: Uwe Grossmann, Axel Sikora |  
Room D Session TD2:  
24. Special Stream in Project Management  
Co-Chairs: Carsten Wolff, Jose Ramon Otegi-Olaso |
<p>| 12:50 PM – 1:50 PM | Show Room Lunch |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Event</th>
</tr>
</thead>
</table>
| 1:50 PM – 2:30 PM | Hall of lobby | Poster session TP  
Chair: Volodymyr Opanasenko                                        |
| 2:30 PM – 4:10 PM | Room A       | Session TA3: 5. Computer Systems for Healthcare and Medicine  
Chair: Francesca Guerriero                                             |
|                 | Room B       | Session TB3: 23. Special Stream in Machine Learning  
Co-Chairs: Yevgeniy Bodyanskiy, Eduard Petlenkov                       |
|                 | Room C       | Session TC3: 28. Special Stream in Wireless Systems  
Co-Chairs: Uwe Grossmann, Axel Sikora                                 |
<p>| 4:10 PM – 5:00 PM |              | Transfer to city tour in downtown                                     |
| 5:00 PM – 7:00 PM |              | City Tour                                                             |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Event</th>
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<tbody>
<tr>
<td><strong>8:00 AM – 4:00 PM</strong></td>
<td><strong>Hall of lobby</strong></td>
<td><strong>Registration</strong></td>
</tr>
<tr>
<td><strong>8:00 AM – 8:30 AM</strong></td>
<td><strong>Hall of lobby</strong></td>
<td><strong>Welcome coffee</strong></td>
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<tr>
<td><strong>8:30 AM – 10:10 AM</strong></td>
<td><strong>Room A</strong></td>
<td><strong>Session FA1:</strong> 1. Advanced Instrumentation and Data Acquisition Systems Chair: Zbigniew Kokosinski</td>
</tr>
<tr>
<td><strong>Room B</strong></td>
<td><strong>Session FB1:</strong> 7. Data Analysis and Modeling Chair: Oleksandr Sudakov</td>
<td></td>
</tr>
<tr>
<td><strong>Room C</strong></td>
<td><strong>Session FC1:</strong> 15. Pattern Recognition, Digital Image and Signal Processing Co-Chairs: Choubeila Maaoui, Agata Manolova</td>
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</tr>
<tr>
<td><strong>Room D</strong></td>
<td><strong>Session FD1:</strong> 19. Special Stream in Cyber Security Chair: Oleksandr Letychevskyi</td>
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<tr>
<td><strong>10:10 AM – 10:30 AM</strong></td>
<td><strong>Hall of lobby</strong></td>
<td><strong>Coffee Break</strong></td>
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<tr>
<td><strong>10:30 AM – 12:10 PM</strong></td>
<td><strong>Room A</strong></td>
<td><strong>Session FA2:</strong> 2. Advanced Mathematical Methods for Data Acquisition and Computing Systems Chair: Vladimir Oleshchuk</td>
</tr>
<tr>
<td><strong>Room B</strong></td>
<td><strong>Session FB2:</strong> 10. Information Computing Systems for Education and Commercial Applications Chair: Alexandre Sava</td>
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<tr>
<td><strong>Room C</strong></td>
<td><strong>Session FC2:</strong> 26. Special Stream in Smart Buildings and Smart Cities Co-Chairs: Dan Popescu, Grigore Stamatescu</td>
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</tr>
<tr>
<td><strong>Room D</strong></td>
<td><strong>Session FD2:</strong> 22. Intelligent Robotics and Sensors Chair: Yuriy Kondratenko</td>
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<tr>
<td><strong>12:10 PM – 1:00 PM</strong></td>
<td><strong>Room A (Auditorium)</strong></td>
<td><strong>Plenary Session F1</strong> Kurosh Madani “Machine-Awareness Through a Machine-Learning Based Humanization of Robots’ Gazing” Chair: Robert E. Hiromoto</td>
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<tr>
<td><strong>1:00 PM – 2:00 PM</strong></td>
<td><strong>Show Room</strong></td>
<td><strong>Lunch</strong></td>
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<tr>
<td><strong>2:00 PM – 2:40 PM</strong></td>
<td><strong>Hall of lobby</strong></td>
<td><strong>Poster Session FP</strong> Chair: Evgeny Pyshkin</td>
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<tr>
<td><strong>Room A</strong></td>
<td><strong>Domenico Grimaldi Memorial Session</strong></td>
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<tr>
<td><strong>Co-Chairs:</strong> Anatoliy Sachenko, George Markowsky, Francesca Guerriero</td>
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<tr>
<td>Time</td>
<td>Room A</td>
<td>Room B</td>
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<td>7:00 PM-10:00 PM</td>
<td>Orangerie, Arsenal building in Metz downtown Conference Dinner</td>
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<td>Time</td>
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<td>8:00 AM – 1:00 PM</td>
<td>Hall of lobby</td>
<td>Registration</td>
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<tr>
<td>8:00 AM – 8:30 AM</td>
<td>Hall of lobby</td>
<td>Welcome coffee</td>
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<tr>
<td>8:30 AM – 9:20 AM</td>
<td>Room A (Auditorium)</td>
<td>Plenary Session S1</td>
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<tr>
<td>9:20 AM – 11:00 AM</td>
<td>Room A</td>
<td>Session SA1:</td>
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<td>19. Special Stream in Cyber Security Chair: Vitaly Klyuev</td>
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<tr>
<td></td>
<td>Room B</td>
<td>Session SB1:</td>
</tr>
<tr>
<td>11:00 AM – 11:30 AM</td>
<td>Hall of lobby</td>
<td>Coffee Break &amp; Poster session SP Chair: Roman Kochan</td>
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<tr>
<td>11:30 AM – 1:10 PM</td>
<td>Room A</td>
<td>Session SA2:</td>
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<tr>
<td></td>
<td>Room B</td>
<td>Session SB2:</td>
</tr>
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<td></td>
<td>7. Data Analysis and Modeling Chair: Miroslav Kvassay</td>
</tr>
<tr>
<td>1:10 PM – 2:10 PM</td>
<td>Show Room</td>
<td>Lunch</td>
</tr>
<tr>
<td>2:10 PM – 3:10 PM</td>
<td>Room A (Auditorium)</td>
<td>Round Table and Closing Ceremony Co-Chairs: George Markowsky, Anatoliy Sachenko, Kondo H. Adjallah</td>
</tr>
</tbody>
</table>
Conference Technical Program

Wednesday, September 18, 2019

6:00 PM – 8:00 PM
Registration and Welcoming Reception:

Thursday, September 19, 2019

7:40 AM – 4:00 PM
Registration: Hall of lobby

7:40 AM – 8:00 AM
Welcome Coffee: Hall of lobby

8:00 AM – 8:20 AM
Opening.
Room: A

8:20 AM – 9:10 AM
Room: Room A (Auditorium)
Plenary Session T1
Jürgen Sieck “Augmented and Virtual Reality Applications for Culture and Tourism”
Chair: Anatoliy Sachenko

9:10 AM – 10:50 AM
Session TA1: 1. Advanced Instrumentation and Data Acquisition Systems
   Room: A
   Co-Chairs: Peter Schulz, Piotr Bilski
   1. #076. Identification of Mobile Terminal with Femtocell on Drone for Civil Protection Applications. Roberta Avanzato, Francesco Beritelli, Mario Vaccaro.

9:10 AM – 10:50 AM
Session TB1: 7. Data Analysis and Modeling
Room: B
Chair: Miki Sirola
5. #007. Indoor Emergency Evacuation Model Based on Artificial Bee Colony Algorithm. Xinlu Zong, Jiayuan Du, Wei Liu, Lu Zhang, Qian Huang.

9:10 AM – 10:50 AM
Session TC1: 15. Pattern Recognition, Digital Image and Signal Processing
Room: C
Co-Chairs: Ivo Draganov, Aleksander Doudkin
5. #017. Low Cost Outdoors WSN Parking System for Metropolitan Areas Based on RSS. Mauricio Postigo-Málaga, Luis Porras Figueroa, José Chilo.
9:10 AM – 10:50 AM
**Session TD1: 19. Special Stream in Cyber Security**

**Room: D**

**Co-Chairs:** George Markowsky, Igor Kotenko


10:50 AM – 11:10 AM
**Coffee Break:** Hall of lobby

11:10 AM – 12:50 PM
**Session TA2: 2. Advanced Mathematical Methods for Data Acquisition and Computing Systems**

**Room: A**

**Chair:** Leonid Lyubchyk

1. **#077.** Lattice Data Analytics and an Exploratory Analysis of the Carver2 Dataset. Linda Markowsky, George Markowsky.
11:10 AM – 12:50 PM
Session TB2: 10. Information Computing Systems for Education and Commercial Applications

Room: B
Chair: Sergii Telegenk
4. #216. The Creation of a Free Vocal SMS and Email Sender and Reader App with Chat Style Interface. Radu-Ştefan Ricman, Roland Szabo, Aurel Gontean.

11:10 AM – 12:50 PM
Session TC2: 28. Special Stream in Wireless Systems

Room: C
Co-Chairs: Uwe Grossmann, Axel Sikora
11:10 AM – 12:50 PM
Session TD2: 24. Special Stream in Project Management
Room: D
Co-Chairs: Carsten Wolff, Jose Ramon Otegi-Olaso
3. #274. International Cooperation at the University Level. Obstacles and Challenges for Incoming Students and How to Eliminate them. Anna Badaskan.
5. #205. The Project Management in Italian Air Force and the Touch&Go Methodology. Francesca Fabiano, Luigi Di Puglia Pugliese, Francesca Guerriero.

12:50 PM – 1:50 PM
Lunch: Show Room

1:50 PM – 2:30 PM
Wieslaw Winiecki Memorial Session
Room: A
Co-Chairs: Anatoliy Sachenko, George Markowsky, Piotr Bilski

1:50 PM – 2:30 PM
Poster Session TP: Hall of lobby
Chair: Volodymyr Opanasenko


6. #059. The universal neural network model for solving the Navier-Stokes equation. Aleksei Lomakin, Nikolai Korsunov.

7. #141. SOA Based System for Big Genomic Data Analytics and Knowledge Discovery. Veska Gancheva, Plamenka Borovska.


10. #008. The Development of Distance Learning in Ukrainian Liberal Arts Institutions Based on EU Experience. Halina Faljiushynska, Aleksandra Klos-Witkowska, Bogdan Buyak, Grigory Tereshchuk, Uliana Iatsykovska, Pawel Falat, Rafał Szklarczyk.


12. #122. An Improved Association Rule Mining Algorithm Based on Ant Lion Optimizer Algorithm and FP-Growth. Dawei Dong, Zhiwei Ye, Yu Cao, Shiwei Xie, Fengwen Wang, Wei Ming.


18. #027. Distributed Text Feature Selection Based On Bat Algorithm Optimization. Hongwei Chen, Qiao Hou, Lin Han, Zhou Hu, Zhiwei Ye, Jun Zeng, Jiansen Yuan.


22. #129. Emergency Forecasting on the Basis of the Bifurcation Analysis Practice-Oriented to Local Climate Dynamics. Yury Kolokolov, Anna Monovskaya.

23. #184. To Experimental Imitations of Evolutional Scenarios in Local Climate Dynamics. Yury Kolokolov, Anna Monovskaya, Vladimir Bagrov.


2:30 PM – 4:10 PM

**Session TA3: 5. Computer Systems for Healthcare and Medicine**

**Room: A**

**Chair:** Francesca Guerriero

1. #094. Development of Architectural Realizations of Phototherapy Computer’s Systems for Prevention and Treatment. Alexander Trunov, Alexander Belikov.


2:30 PM – 4:10 PM
Session TB3: 23. Special Stream in Machine Learning
Room: B
Co-chairs: Yevgeniy Bodyanskiy, Eduard Petlenkov

2:30 PM – 4:10 PM
Session TC3: 28. Special Stream in Wireless Systems
Room: C
Co-Chairs: Uwe Grossmann, Axel Sikora
3. #313. Formal Description of Use Cases for Industry 4.0 Maintenance Processes Using Blockchain Technology. Jan Stoldt, Eugen Jastremskoj, Christoph Reich, Dominik Welte, Axel Sikora.

4:10 PM – 5:00 PM
Transfer to city tour in downtown

5:00 PM – 7:00 PM
City Tour

¹ Presentation online
**Friday, September 20, 2019**

8:00 AM – 4:00 PM  
**Registration:** Hall of lobby

8:00 AM – 8:30 AM  
**Welcome coffee:** Hall of lobby

8:30 AM – 10:10 AM  
**Session FA1: 1. Advanced Instrumentation and Data Acquisition Systems**  
**Room:** A  
**Chair:** Zbigniew Kokosinski  

8:30 AM – 10:10 AM  
**Session FB1: 7. Data Analysis and Modeling**  
**Room:** B  
**Chair:** Oleksandr Sudakov  
4. #262. Formal Aspects of Case-Based Data Modelling for Intelligent Drilling Control. Vasyl Sheketa, Mykola Chesanovskyy, Mykola Pasyeka, Volodymyr Pikh, Yulia Romanyshyn, Viktoriia Bandura.


8:30 AM – 10:10 AM
Session FC1: 15. Pattern Recognition, Digital Image and Signal Processing
Room: C
Co-Chairs: Choubeila Maaoii, Agata Manolova
2. #082. Comparison of Pixel Correlation Induced by Space-Filling Curves on 2D Image Data. Stéphane Duguay, Steven Pigeon.

8:30 AM – 10:10 AM
Session FD1: 19. Special Stream in Cyber Security
Room: D
Chair: Oleksandr Letychevskyi
1. #014. Enhancing the Performance of an Image Steganalysis Approach Using Variable Batch Size-Based CNN on GPUs. Eslam M. Mustafa, Mohamed M. Fouad, Mohamed A. Elshafey.
5. #304. Method of Fraudster Fingerprint Formation During Mobile Application Installations. Tetiana Polhul, Andrii Yarovyi.
10:10 AM – 10:30 AM
Coffee Break: Hall of lobby

10:30 AM – 12:10 PM
   Room: A
   Chair: Vladimir Oleshchuk
2. #250. Fuzzy Logic Control for a Stand-Alone PV System with PI Controller for Battery Charging Based on Evolutionary Technique. Omnia S. S. Hussian, Hany M. Elsayed, M. A. Moustafa Hassan.
5. #300. Development of Large Numbers Factorization Algorithm. Oleg Illiashenko, Vladimir Pevnev.

10:30 AM – 12:10 PM
Session FB2: 10. Information Computing Systems for Education and Commercial Applications
   Room: B
   Chair: Alexandre Sava
2. #189. Online Incipient Chatter Detection Based on Once-Per-Revolution Sampling and Dynamic Threshold Variant. Yanqing Zhao, Kondo H. Adjallah, Alexandre Sava, Zhouhang Wang.

10:30 AM – 12:10 PM

Session FC2: 26. Special Stream in Smart Buildings and Smart Cities
Room: C
Co-Chairs: Dan Popescu, Grigore Stamatescu

10:30 AM – 12:10 PM

Session FD2: 22. Intelligent Robotics and Sensors
Room: D
Chair: Yuriy Kondratenko
4. #119. Motion Detection of a Motorcycle Approaching from Behind Using Head and Torso Simulator. Ryuichi Shimoyama, Shunta Ishitsuka.
12:10 PM – 1:00 PM

**Room:** Room A (Auditorium)

**Plenary Session F1**

Kurosh Madani “Machine-Awareness Through a Machine-Learning Based Humanization of Robots’ Gazing”

Chair: Robert E. Hiro

1:00 PM – 2:00 PM

**Lunch:** Show Room

2:00 PM – 2:40 PM

**Domenico Grimaldi Memorial Session**

Room: A

**Co-Chairs:** Anatoliy Sachenko, George Markowsky, Francesca Guerriero

2:00 PM – 2:40 PM

**Poster Session FP:** Hall of lobby

**Chair:** Evgeny Pyshkin

1. #071. Evaluation Cognitive Maps for extended technology roadmapping in IoT.  
   Anna Usik, Volodymyr Kazymyr.

   Volodymyr Romanov, Igor Galeyuka, Hanna Antonova, Oleksandra Kovyrova,  
   Volodymyr Hrusha, Oleksander Voronenko.

3. #145. An Image Segmentation Method Based on Improved Krill Herd Algorithm  
   and Fuzzy C-Means Clustering Algorithm. Ziwei Wang, Zhiwei Ye, Wei Liu,  
   Mingwei Hu, Yuanzhi Tang, Li Zhang, Ming Wei.

4. #265. An Image Enhancement Optimization Method Based on Differential  
   Evolution Algorithm and Cuckoo Search Through Serial Coupled Mode. Zhiwei  
   Ye, Ye Cao, Aixin Zhang, Can Jin, Lie Ma, Xiang Hu, Jiwei Hu.

5. #266. An Image Thresholding Method Based on Differential Evolution Algorithm  
   and Genetic Algorithm. Zhiwei Ye, Aixin Zhang, Ye Cao, Lie Ma, Can Jin, Xiang  
   Hu, Jiwei Hu.

6. #270. Emotional Text Analysis Based on Ensemble Learning of Three Different  
   Classification Algorithms. WenShuo Bian, ChunZhi Wang, ZhiWei Ye, Lingyu  
   Yan.

7. #197. Information Hiding Using 3D-Printing Technology. Alexandr Kuznetsov,  
   Oleh Stefanovych, Yuriy Gorbenco, Oleksii Smirnov, Victor Krasnobaev,  
   Kateryna Kuznetsova.
21. #004 Comparative Analysis of Key Encapsulation Mechanisms. Maryna Yesina, Mikolaj Karpinski, Volodymyr Ponomar, Yurij Gorbenko, Tomasz Gancarczyk, Uliana Iatsykovska.
23. #086 Dynamic Changes of the Colour Intensity of Collected Urine as a Basis for a Distant Uroflowmetry. Leonid Godlevsky, Konstantin Shakun, Vasyl Martsenyuk, Tatyana Tatarchuk, Tatyana Stoeva, Tamara Godlevska, Ilya Shakun, Aleksandra Klos-Witkowska.

2:40 PM – 4:20 PM
**Session FA3: 5. Special Stream in Human-Machine Interaction**
**Room: A**
**Co-Chairs:** Peter Arras, Galyna Tabunshchyk

2:40 PM – 4:20 PM
**Session FB3: 14. Internet of Things**
**Room: B**
**Chair:** Robert E. Hiromoto

2:40 PM – 4:20 PM
**Session FC3: 29. Workshop on Cyber Physical Systems and Internet of Things**
**Room: C**
**Chair:** Vyacheslav Kharchenko
5. #293. ENISA Documents in Cybersecurity Assurance for Industry 4.0: IIoT Threats and Attacks Scenarios. Vladimir Sklyar, Vyacheslav Kharchenko.

2:40 PM – 4:20 PM
Session FD3: 9. High Performance Computing
Room: C
Chair: Vadym Mukhin
5. #045. The FPGA-Based Problem-Oriented On-Board Processor. Volodymyr Opanasenko, Alexander Palahin, Stanislav Zavyalov.

7:00 PM – 10:00 PM
Orangerie, Arsenal building in Metz downtown
Conference Dinner
Saturday, September 21, 2019

8:00 AM – 1:00 PM
Registration: Hall of lobby

8:00 AM – 8:30 AM
Welcome coffee: Hall of lobby

8:30 AM – 9:20 AM
Room: Room A (Auditorium)
Plenary Session S1
Chair: Kondo H. Adjallah

9:20 AM – 11:00 AM
Session SA1: 19. Special Stream in Cyber Security
Room: B
Chair: Vitaly Klyuev
2. #229. Secure and Privacy Preserving Pattern Matching in Distributed Cloud-based Data Storage. Vladimir Oleshchuk.

9:20 AM – 11:00 AM
Session SB1: 25. Special Stream in Quantum Computing and Post-Quantum Cryptography
Room: B
Chair: Yevhen Vasiliu


11:00 AM – 11:30 AM
Hall of lobby
Coffee Break & Poster session SP
Chair: Roman Kochan

2. #140. Feedforward Neural Network Based on Improved Gray Wolf Optimizer. Wei Liu, Mingwei Hu, Zhiwei Ye, Yuanzhi Tang, Ziwei Wang, Li Zhang, Ming Wei.

3. #151. Neural Network Structure Learning based on Binary Coded Ant Lion Algorithm. Zhiwei Ye, Sikai Zhan, Shuang Sun, Yiheng Sun, Han Yu, Quanfeng Yao.


11.#257. The Simple Virtual Impedance Spectroscopy Based on USB DAQ Card. Mykhaylo Dorozhovets, Malgorzata Augustyn.


13.#102. Abnormal Event Detection in Video Based on SVDD. Xinlu Zong, Lu Zhang, Jiayuan Du, Liu Wei, Qian Huang.


11:30 AM – 1:10 PM

**Session SA2: 8. Embedded Systems**

Room: A

**Co-Chairs:** Camel Tanougast, Alexander Drozd


11:30 AM – 1:10 PM
Session SB2: 7. Data Analysis and Modeling
Room: A
Chair: Miroslav Kvassay
1. #075. Lattice Data Analytics: The Poset of Irreducibles and the MacNeille Completion. George Markowsky, Linda Markowsky.
5. #241. Improving Sentiment Analysis in Twitter Using Sentiment Specific Word Embeddings. Rania Othman, Youcef Abdelsadek, Kamel Chelghoum, Imed Kacem, Rim Faiz.

1:10 PM – 2:10 PM
Lunch: Show Room

2:10 PM – 3:10 PM
Round Table and Closing Ceremony: Room A
Co-Chairs: George Markowsky, Anatoliy Sachenko, Kondo H. Adjallah
The IDAACS 2019 conference will be held at ENIM. ENIM is located in Metz Technopole area: 1 Route d'Ars Laquenexy, 57078 Metz. It can be easily reached from the Downtown Railway Station (Gare de Metz Ville) by the bus Mettis B, direction to Hopital de Mercy, and drop at bus-stop Grandes Écoles.

Most of the time there is a bus every 10 minutes and the journey takes about 20 minutes from downtown. For the timetable, see the website LeMet (http://lemet.fr/).
How to get Metz from airports

Train tickets early booking through internet enables getting cheaper prices

For booking train tickets, see SNCF website. The trip takes 1h20 from Paris by high speed train (TGV), 40-50 minutes from Luxembourg and 4h30 from Frankfurt.

Paris Charles de Gaule (CDG) Airport Terminal 2 –> Metz (2 alternatives)

1. a) Take the high-speed train (TGV) from CDG airport –> Lorraine TGV station (1h10), located at 25 km of Metz (50 – 90 Euros, cheaper with early Internet reservation); b) then, take the shuttle (navette) from Lorraine TGV Station –> Metz railway station (30 minutes trip, 6.10 Euros). The shuttle fees might be included in the train ticket (so show your train ticket to the bus driver), or be paid onboard the shuttle about 7€ for one trip.

2. If you prefer to arrive directly to Metz Ville (Downtown) railway station, you may book a round-trip ticket on a TGV from Gare de l'Est in Paris. Express Metro RER B from the CDG Airport enables to reach Paris Gare de Nord in about 30-40 minutes, and then 1) you may walk to Gare de l'Est in 5 minutes, or 2) you may take the Metro line 4 and drop at only one stop.

Luxembourg Airport (luxair.lu) –> Metz (3 alternatives)

1. a) take the shuttle from Luxembourg Airport –> Luxembourg Railway Station (2 Euros); b) then take the train from Luxembourg Railway Station (16 – 19 Euros according to the train schedule) - > Metz Ville (Downtown) Station (about 50 min).

2. a) You may take the Eurobus number 16 (2€) from Luxembourg Airport –> Luxembourg Railway Station (see schedules); b) then take the train from Luxembourg Railway Station (16 – 19 Euros according to the train schedule) - > Metz Ville (Downtown) Station (about 50 min).

3. You may take the Flibco Bus from Luxembourg airport –> Metz Downtown (14 Euros, with booking on Internet).

Strasbourg airport –> Metz (2 alternatives)

Take a shuttle from Strasbourg Airport –> Strasbourg Railway Station (4,40 Euros), then:

1. take an Intercity train (TER) from Strasbourg Railway Station - > Metz Ville (Downtown) Station (10 – 37 Euros, according to schedule and promotions).

2. take a High-Speed train (TGV) from Strasbourg Railway Station –> Lorraine TGV Station (28 – 44 Euros, according to booking); then take the Shuttle from Lorraine TGV Station –> Metz Ville (Downtown) Station (6.10 Euros).
Bruxelles-Charleroi / Frankfurt-Hahn (ryanair.com) airports

From these airports, you can take a Flibco shuttle to Metz (flibco.com), and early booking enables getting best prices.

Frankfurt Airport → Metz (2 alternatives)

1. By Bus: 26-39 Euros (according to the bus schedule)
2. By Train: 57-69 Euros (according to the train schedule)

Travel to Metz by car

When travelling by car on highway, take the exit Metz centre, or the exit Metz Est.

The GPS coordinates are: 49°05'32.7"N 6°13'35.7"E
Information on How to Reach the Proposed Conference Site

Information on Local Transportation: Bus and Taxi

The conference site may be reached from downtown hotels by Tramway (1.5 € for one-way Tram ticket) or by Taxi (15 €) or by car within 15 min. It may also be reached from closer hotels by walking or by Tram (10 min)