## **IDC 2017** 11 – 13 October 2017

1 – 13 October 201 Belgrade, Serbia

# 11th International Symposium on Intelligent Distributed Computing



	Wednesday October 11 <sup>th</sup> , 2017	Thursday October 12 <sup>th</sup> , 2017	Friday October 13 <sup>th</sup> , 2017
8:00		Registration	Registration
9:00		Symposium Opening	Invited Speaker – Karl Tuyls
10:00		Invited Speaker – Eva Onaindia	Coffee Break
		Coffee Break	Session 4
11:00		Session 1 Multi-agent Systems	Service-based Distributed Systems
		+	Session 5
12:00		WASA 2017 7 <sup>th</sup> Workshop on Applications of Software Agents	Machine Learning
13:00		Lunch	Lunch
14:00			
			Session 6
15:00		Invited Speaker – Bela Stantic	Internet of Things and Cloud
		Session 2	Computing
16:00		Reasoning and Decision Making in	
		Distributed Environments	Session 7
17:00		Coffee Break	Data Analysis, Mining and
		Session 3	
18:00	Nikola Tesla Museum	Distributed Algorithms and Optimization	Closing Session
19:00			
	Cocktail		
20:00		Conference Dinner	

Full papers have 20 minutes for presentations and 5 minutes for discussions, while short papers have 15 minutes for presentations and 5 minutes for discussions (short papers are marked with \*).

	Wednesday October 11 <sup>th</sup> , 2017
18:00 - 19:00	Visit of the Nikola Tesla Museum (meeting is at 17:50 in front of the museum)
19:15 - 21:00	Cocktail at School of Electrical Engineering

	Thursday October 12 <sup>th</sup> , 2017
8:00 - 9:00	Registration
9:00 - 9:30	Symposium Opening
9:30 - 10:30	Invited Speaker - Eva Onaindia (Chair: Lars Braubach) Approaches to Multi-Agent Planning Coordination
10:30 - 11:00	Coffee Break
11:00 - 13:00	Session 1 – Multi-agent Systems + WASA 2017 (Chair: Lars Braubach)
11:00 - 11:20	Programming the Interaction Space Effectively with ReSpecTX Giovanni Ciatto, Stefano Mariani, and Andrea Omicini
11:25 – 11:45	Multi-Agent System to Design Next Generation of Airborne Platform Ludovic Grivault, Amal El Fallah-Seghrouchni, and Raphaël Girard-Claudon
11:50 - 12:05	* A Drone-based Building Inspection System using Software-Agents Jun Jo, Zahra Jadidi, and Bela Stantic
12:10 - 12:30	Agent-Based Computing in the Internet of Things: a Survey Claudio Savaglio, Giancarlo Fortino, Maria Ganzha, Marcin Paprzycki, Costin Bădică, and Mirjana Ivanović
12:35 – 12:55	Teaching, Learning and Assessment of Agents and Robotics in a Computer Science Curriculum Ioanna Stamatopoulou, Konstantinos Dimopoulos, and Petros Kefalas
13:00 - 14:30	Lunch
14:30 - 15:30	Invited Speaker –Bela Stantic (Chair: Petros Kefalas) Integration of Heterogeneous Voluminous Data in Distributed Environment
15:30 - 17:00	Session 2 – Reasoning and Decision Making in Distributed Environments (Chair: Petros Kefalas)
15:30 - 15:50	Towards a Paraconsistent Approach to Actions in Distributed Information-Rich Environments Łukasz Białek, Barbara Dunin-Kęplicz, and Andrzej Szałas

15:55 – 16:15	A Modified Vickrey Auction with Regret Minimization for Uniform Alliance Decisions Marin Lujak and Marija Slavkovik
16:20 - 16:35	* Lightweight Cooperative Self-Localization as Support to Traffic Regulation for Autonomous Car Driving Assia Belbachir, Marcia Pasin, and Amal El Fallah Seghrouchni
16:40 - 16:55	* A New Approach for Vertical Handover between LTE and WLAN Based on Fuzzy Logic and Graph Theory Zlatko Dejanović
17:00 - 17:30	Coffee Break
17:30 - 19:05	Session 3 – Distributed Algorithms and Optimization (Chair: Marin Lujak)
17:30 - 17:50	A Performance Analysis of Self-* Evolutionary Algorithms on Networks with Correlated Failures Rafael Nogueras and Carlos Cotta
17:55 – 18:15	Spatially Structured Evolutionary Algorithms: Graph Degree, Population Size and Convergence Speed Carlos M. Fernandes, Juan L. J. Laredo, and Agostinho C. Rosa
18:20 - 18:30	Wind Power Production Forecasting using Ant Colony Optimization and Extreme Learning Machines Maria Carrillo, Javier Del Ser, Miren Nekane Bilbao, Cristina Perfecto, and David Camacho
18:45 – 19:00	* On the Applications of Dijkstra's Shortest Path Algorithm in Software Defined Networks Tihana Galinac Grbac and Nikola Domazet
20:00	Conference Dinner

	Friday October 13 <sup>th</sup> , 2017
8:00 - 9:00	Registration
9:00 - 10:00	Invited Speaker – Karl Tuyls (Chair: Michele Malgeri) Multi-agent learning: paradigms, challenges and prospects
10:00 - 10:30	Coffee Break
10:30 - 11:40	Session 4 – Service-based Distributed Systems (Chair: Michele Malgeri)
10:30 - 10:50	Service Discovery in Megascale Distributed Systems Kai Jander, Alexander Pokahr, Lars Braubach, and Julian Kalinowski
10:55 – 11:15	Context-Aware Access Control Model for Services Provided from Cloud Computing Ichiro Satoh
11:20 - 11:35	* Reference Architecture for Self-Adaptive Microservice Systems Krasimir Baylov and Aleksandar Dimov

11:40 - 12:55	Session 5 – Machine Learning (Chair: Carlos Cotta)
11:40 - 12:00	Heuristic of Anticipation for Fair Scheduling and Resource Allocation in Grid VOs Victor Toporkov, Anna Toporkova, and Dmitry Yemelyanov
12:05 – 12:25	Convolutional Neural Networks for Four-Class Motor Imagery Data Classification Tomas Uktveris and Vacius Jusas
12:30 - 12:50	Binary Classification of Images for Applications in Intelligent 3D Scanning Branislav Vezilić, Dušan B. Gajić, Dinu Dragan, Veljko Petrović, Srđan Mihić, Zoran Anišić, and Vladimir Puhalac
13:00 - 14:30	Lunch
14:30 - 16:30	Session 6 – Internet of Things and Cloud Computing (Chair: Victor Toporkov)
14:30 - 14:50	Connecting Social Media Data with Observed Hybrid Data for Environment Monitoring Jinyan Chen, Sen Wang, and Bela Stantic
14:55 – 15:15	An Argumentative Approach to Smart Home Office Ambient Lighting Andrei Mocanu
15:20 - 15:40	A Recommender System Based on Hierarchical Clustering for Cloud e-Learning Krenare Pireva and Petros Kefalas
15:45 – 16:05	A Taxonomy of Anomalies in Distributed Cloud Systems: The CRI-Model Kim Reichert, Alexander Pokahr, Till Hohenberger, Christopher Haubeck, and Winfried Lamersdorf
16:10 - 16:25	* Modeling and Analysis of IoT Energy Resource Exhaustion Attacks Vasily Desnitsky and Igor Kotenko
16:30 - 18:10	Session 7 – Data Analysis, Mining and Integration (Chair: Costin Bădică)
16:30 - 16:50	Context Aware Resource and Service Provisioning Management in Fog Computing Systems Saša Pešić, Milenko Tošić, Ognjen Ivković, Mirjana Ivanović, Miloš Radovanović, and Dragan Bošković
16:55 – 17:15	EUStress: a Human Behaviour Analysis System for Monitoring and Assessing Stress during Exams Filipe Gonçalves, Davide Carneiro, Paulo Novais, and José Pêgo
17:20 - 17:40	Post Sharing-based Credibility Network for Social Network Vincenza Carchiolo, Alessandro Longheu, Michele Malgeri, Giuseppe Mangioni, and Marialaura Previti
17:45 – 18:05	Ontological Hybrid Storage for Security Data Igor Kotenko, Andrey Chechulin, Elena Doynikova, and Andrey Fedorchenko
18:10 - 18:30	Closing Session

## Belgrade

## 1 Travelling to Belgrade

#### 1.1 By Airplane

Belgrade's international airport "Nikola Tesla" (BEG) (<u>Official website</u>) is located 12 km from the city center. It has direct and connecting flights to various destinations worldwide. You can take a taxi or public transportation to get to the city centre from the airport.

If you use a taxi, the safest way is to contact the city service TAXI INFO desk, located in the baggage reclaim area of the airport. There are many "freelance" drivers at the airport, offering their services, but they are usually much more expensive. The price of a taxi ride varies according to the covered distance, and should not exceed 20 Euro to the city centre. You can check current prices <u>here</u>. The School of Electrical Engineering, where the conference will be held, is located in the second zone.

If you use a public bus, there are two options, mini bus A1 (for the price of 300 RSD) and public bus line 72 (price ranging from 89-150 RSD depending on the type of ticket). The tickets can be purchased from the driver. Line A1 stops at the Belgrade Main railway station and the Slavija Square, while line 72 stops at Zeleni venac Square, and from these stops you can find a connecting line to any desired destination. The details of the routes the buses take, as well as timetables can be found at the Belgrade airport website.

#### 1.2 By Car

Belgrade is located at the intersection of the European E-70 and E-75 highways. Foreign drivers in Serbia are required to have a national driver's license, traffic permit and an insurance policy. Additional information can be found <u>here</u> and <u>here</u>.

#### 1.3 By Bus

There is a regular bus line to Belgrade from almost every major city in Europe. You can find the timetable <u>here</u>.

#### 1.4 By Train

There are regular train lines to Belgrade from major cities in Europe. You can plan your trip using eurail.

### 2 Currency

The local currency is Serbian dinar, RSD (1 Euro  $\sim$ 121 RSD). The value of dinar changes frequently, so please be informed about it at the time of your travel.

There are numerous exchange offices across Belgrade, which usually do not charge the commission. For exchange rate information you can check the daily updated Exchange Rate List on the official site of the National Bank of Serbia (<u>link</u>).

## 3 Area Code

The phone code for Serbia is +381, for Belgrade (0)11, for Novi Sad (0)21, for Niš (0)18 etc. For international calls from Serbia dial 00 (or + on mobile phones) followed by the code of the desired country.

## 4 Public Transport

Belgrade city public is connected by a network of bus, trolleybus and tram routes run by GSP "Beograd" and bus services operated by private bus companies, on around 130 routes. BusPlus system applies to all public transport vehicles (GSP, private carriers, Lasta and Bg Voz).

Single tickets can be bought:

- at kiosks marked with a ticket sales sticker (preferable). You can ask in every kiosk whether they sell BusPlus tickets, and most of them do,
- at GSP points-of-sale. GSP points-of-sale are: Skender begova 47, Deligradska 10, TC "Republic Square",
- or in public transport vehicles from the driver or conductor, but that option should be avoided because the vehicles can be crowded and the driver will not be able to sell your ticket to you.

Ticket bought on the bus costs 150 RSD.

You can buy an "unpersonalized" card with the price of 250 RSD, and then you can add credit to it. In that case, one ride costs 89 RSD and you can drive with that card 90 min. on all lines (for 1st or 2nd public transportation zone). The card needs to be scanned at the beginning of the journey, and the 90 min. start at that moment.

Daily paper cards can be bought at kiosks or GSP points-of-sale and they last 1, 3 or 5 days from the moment of purchase, except during the night regime (00h to 04h). The base price of the paper card is 40 RSD to which the price of the time card is added.

Prices of the time cards are:

- 1 day for 1st or 2nd public transportation zone 250 RSD,
- 3 days for 1st or 2nd public transportation zone 700 RSD,
- 5 days for 1st or 2nd public transportation zone 1000 RSD.

Daily cards need to be scanned when entering the vehicle, as well as on any vehicle change, so they would be valid during ticket control.

### 5 Taxi

The passenger is only required to pay for taxi services according to the current price list and to the amount indicated by the taxi meter at the end of the journey. The cost of the taxi ride also includes

transport of the passenger's personal baggage. Negotiating a price for taxi services, where the taxi meter is not switched on, is not recommended, especially at the airport.

The list of taxi associations in Belgrade can be found on the website of the Belgrade airport (<u>link</u>), and so can <u>taxi fares</u>.

## 6 City Orientation

#### 6.1 Directions to the School of Electrical Engineering

Following are the instructions on how to reach some of the key locations in the city in relation to the School of Electrical Engineering. The two transit stops near the School are Faculty of Law (Pravni fakultet) and Vukov Spomenik.



From the Main railway station, which is located near the Main bus station three tram lines lead to the School of Electrical Engineering: 2, 7 and 12.

From Slavija Square there are two tram lines to the School: 2 and 3.

From the Republic Square (which is near the Knez Mihailova Street) there is a bus line to the School: 26.

#### 6.2 Directions to the Nikola Tesla Museum



#### 6.3 Sightseeing

Some of the sights we recommend for you to see while in Belgrade are:

- Belgrade Fortress, which is made up of the old citadel and Kalemegdan Park and is located at the confluence of Danube and Sava. It is the most visited tourist location in Belgrade. The admission to the Fortress is free.
- Church of Saint Sava is a Serbian Orthodox church, one of the largest Orthodox churches in the world. It is dedicated to Saint Sava, the founder of the Serbian Orthodox Church.
- House of the National Assembly of Serbia is located on the Nikola Pašić Square.
- Republic Square is one of the town squares and a site of several notable public buildings of Belgrade, including the National Museum, the National Theatre and the statue of Prince Mihailo.
- Knez Mihailova street is the main pedestrian and shopping zone in Belgrade.
- **Skadarlija** is the main bohemian quarter of Belgrade, and it's famous for it's restaurants.

For details about sightseeing, cultural and social events in Belgrade, we recommend you visit the following websites:

- <u>Tourist Organization of Belgrade</u>
- Official website of the city of Belgrade
- Belgrade Travel and Business Guide



## 7 On-Line Maps

<u>Plan Plus</u> Interactive Web map for entire Serbia. Includes detailed street maps for most of the larger cities, and for many of the smaller ones, as well.

<u>OpenStreetMap</u> has very good coverage of Belgrade.

<u>Google Maps</u> also have good coverage of Belgrade.

#### 8 WiFi

Eduroam WiFi network will be available at the School of Electrical Engineering.

Conference WiFi will also be available during the event, and the details will be provided at a later date.

### 9 Conference Dinner

The conference dinner will be held on Thursday, October 12<sup>th</sup> at the 3 HATS Restaurant at 20:00.

3 HATS Restaurant, Skadarlija, Skadarska street 29, http://www.trisesira.rs/en/

There will be an organized departure from the School of Electrical Engineering at 19:15.

There is a map below of the route from the School of Electrical Engineering to the 3 HATSRestaurant.



## 10 Contact

For any further information please contact us at our official email address: idc2017@pmf.uns.ac.rs.