

15th Conference on Computer Science and Information Systems (FedCSIS 2020)

CONFERENCE REPORT

The 15th edition of the Conference on Computer Science and Information Systems (FedCSIS 2020; www.fedcsis.org) was to be held in Sofia, Bulgaria, on September 6-9, 2020. Unfortunately, due to the COVID-19 pandemic, it had to be transformed into an online conference. Regardless of the specific format of the event, FedCSIS 2020 was organized by the Institute of Information and Communication Technologies (IICT) of the Bulgarian Academy of Sciences, which was supported the Polish Information Processing Society (Mazovia Chapter), IEEE Poland Section Computer Society Chapter (C-16), Systems Research Institute Polish Academy of Sciences, Warsaw University of Technology and Wrocław University of Economics and Business.

As in the past year, FedCSIS 2020 consisted of the following five **Tracks** divided into **Technical Sessions**.

- **Track 1: Artificial Intelligence**
 - Advanced Artificial Intelligence in Applications (15th Symposium AAIA'20)
 - Language Technologies and Applications (5th Workshop LTA'20)
 - Computational Optimization (13th Workshop WCO'20)
- **Track 2: Computer Science & Systems**
 - Advances in Computer Science & Systems (ACSS'20)
 - Computer Aspects of Numerical Algorithms (13th Workshop CANA'20)
 - Scalable Computing (11th Workshop WSC'20)
- **Track 3: Network Systems and Applications**
 - Advances in Network Systems and Applications (ANSA'20)
 - Internet of Things - Enablers, Challenges and Applications (4rd Workshop IoT-ECAW'20)
 - Cyber Security, Privacy and Trust (1st International Forum NEMESIS'20)
- **Track 4: Information Systems and Technologies**
 - Advances in Information Systems and Technologies (AIST'20)
 - Data Science in Health, Ecology and Commerce (DSH'19) (2nd Special Session DSH'20)
 - Information Systems Management (15th Conference ISM'20)
 - Knowledge Acquisition and Management (26th Conference KAM'20)

- **Track 5: Software and System Engineering**
 - Advances in Software and System Engineering (ASSE'20)
 - Cyber-Physical Systems (7th Workshop IWPCS-7)
 - Lean and Agile Software Development (4th International Conference LASD'20)
 - Model Driven Approaches in System Development (6th Workshop MDASD'20)
 - Software Engineering (40th IEEE Workshop SEW-40)

During the FedCSIS 2020 conference, the following Keynote Lectures were delivered (slides and videos of presentations are available at: <https://fedcsis.org/2020/keynotes>):

- **Christian Blum**, Artificial Intelligence Research Institute (IIIA-CSIC), Barcelona, Spain, *Are you a Hybrid? Yes, of course, everyone is a Hybrid nowadays!*
- **George Boustras**, European University, Nicosia, Cyprus, *Critical Infrastructure Protection – on the interface of safety and security*
- **Hans-Georg Fill**, University of Fribourg, Fribourg, Switzerland, *From Digital Transformation to Digital Ubiquity: The Role of Enterprise Modeling*

FedCSIS 2020 was Chaired by prof. Stefka Fidanova, while Dr. Nina Dobrinkova acted as the Chair of the Organizing Committee.

Technical co-sponsors of the FedCSIS 2020 conference included: IEEE Poland Section, IEEE Czechoslovakia Section Computer Society Chapter, IEEE Poland Section Systems, Man, and Cybernetics Society Chapter, IEEE Poland Section Control System Society Chapter, IEEE Poland Section Computational Intelligence Society Chapter, Bulgarian Section of SIAM, Committee of Computer Science of Polish Academy of Sciences, Eastern Cluster ICT Poland, Mazovia Cluster ICT.

The 2020 edition of the Data Mining Challenge entitled “Network Device Workload Prediction” was focused on the problem of predicting workload-related characteristics of monitored network devices. It was held on real, previously unpublished data, acquired in a time series form from over 3700 sources. The total data size was equal to nearly 220 Gigabytes. The competition attracted over 150 teams from over 30 countries. Over 700 correctly formatted solutions were submitted. The challenge was co-organized by two companies: EMCA Software and QED Software, at the Knowledge Pit online platform.

During the AAIA 2020, the Professor Zdzisław Pawlak Prize for the best paper was awarded for the 15th time. By the decision of the Award Committee, the winners were: in the category Best Student Paper: *“Gradient Boosting Application in Forecasting of*

Performance Indicators Values for Measuring the Efficiency of Promotions in FMCG Retail”, by: Joanna Henzel from Silesian University of Technology, Poland. In the category Best Paper Award: “*Generating Fuzzy Linguistic Summaries for Menstrual Cycles*”, by: Łukasz Sosnowski from Systems Research Institute, Polish Academy of Sciences, Poland and Tomasz Penza from OvuFriend Sp. z o.o., Poland. Awards for the winners were sponsored by the Mazovia Chapter of the Polish Information Processing Society.

English was the exclusive conference language. In 2020, the FedCSIS conference attracted 200 submissions. Out of submitted contributions, after obtaining at least two reviews for each paper, 52 articles were accepted as regular full papers (acceptance rate of 26%), 46 articles were accepted as regular short papers, 12 as regular communication papers, and 8 as position papers. Accepted contributions represent 32 countries.

Conference materials were initially published on USB pen drives (as Preprints) and distributed to conference participants. After the conference, full and short papers have been indexed in the IEEE Digital Library (ISBN Web 978-83-955416-7-4, ISBN USB 978-83-955416-8-1, ISBN Art 978-83-955416-9-8, IEEE Catalog Number CFP2085N-ART (ART), CFP2085N-USB (USB), ISSN 2300-5963); furthermore, they will be sent to the Clarivate Web of Science for indexing. Position Papers and Communication Papers were published as separate volumes (ISSN 2300-5963, Position Papers ISBN Web 978-83-959183-0-8 ISBN USB 978-83-959183-1-5, Communication Papers ISBN Web 978-83-959183-2-2, ISBN USB 978-83-959183-3-9). Moreover, Proceedings, Position Papers and Communication Papers of the FedCSIS 2020 Conference (in their final version) were posted at the conference WWW site – available through the Archive section of the www.fedcsis.org web-site (alongside the Proceedings from **all** past conferences). It should be stressed that **only** papers presented in the conference were published in either form (the FedCSIS conference series strictly adheres to the “IEEE No-show Policy”).

As in previous years, FedCSIS has attracted particularly strong interest of the research community working in artificial intelligence and related areas. Accordingly, from the next conference, in 2021, FedCSIS reflects that interest and – while retaining its acronym – it has been renamed to Federated Conference on Computer Science and Intelligence Systems.

Respectfully submitted by the FedCSIS Conference Series Chairs,

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Leszek Maciaszek,
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