Proceedings

2017 25th Euromicro International Conference on Parallel, Distributed and Network-Based Processing

PDP 2017

St. Petersburg, Russia
6-8 March 2017

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Edited by
Igor Kotenko, Yiannis Cotronis and Masoud Daneshtalab

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Message from the General Chairs
PDP 2017

Welcome to the 25th Euromicro International Conference on Parallel, Distributed, and Network-Based Processing (PDP 2017).

The topics of the Conference, Parallel, Distributed, and Network-Based Processing have undergone impressive changes over recent years. New architectures and applications have become the central focus of the discipline. These changes are often a result of mutual enrichment of parallel and distributed technologies with other rapidly evolving technologies. The PDP conference continues to have a distinctive composition: a main track invites papers over a broad range of topics, and Special Sessions focus on a particular sub-domain of research fields. Each Special Session has its own Chair(s) and Program Committee and invites and selects its own papers, all under the umbrella of the overall conference structure.

The high number of interesting and significant research papers submitted to PDP demonstrates that the conference is becoming an ever more important international event in the field of parallel and distributed computing research. This year PDP 2017, main track and special sessions, have received altogether 162 submissions of 459 authors from 40 countries. On average each paper received 3.1 reviews, with no paper receiving fewer than two reviews. The result was the selection of 52 regular and 41 short papers for publication in these proceedings. The acceptance rate of regular papers in the PDP 2017 including special sessions is 32% and 57% including short. In the main track we received 73 papers and accepted 22 as regular and 17 as short papers. The acceptance rate of regular papers in main track is 30% and including short papers 53%.

We wish to thank all who contributed to the success of the event: the 459 authors, the 227 members of Programme Committees, the 59 sub reviewers, the Keynote speakers, Didier Elbaz, Vladimir Zaborovsky, Victor Toporkov and Vladimir Gorodetsky, and the 24 Special Session Chairs:

- Didier El Baz (GPU Computing and Many Integrated Core Computing);
- Simon Bliudze and Borzoo Bonakdarpour (Formal Approaches to Parallel and Distributed Systems);
- Daniele D'Agostino and Ivan Merelli (Advances in High-Performance Bioinformatics, Systemsand Synthetic Biology);
- Igor Kotenko (Security in Parallel, Networked and Distributed Systems);
- Sébastien Lafond, Laurent Lefèvre, Jean-Marc Pierson, Tim Süß and Tuan Trinh (Energy Efficient Management of Parallel Systems, Platforms, and Computations);
- Thierry Delaitre, Gabor Kecskemeti and Attila Kertesz (Cloud Computing on Infrastructure as a Service and its Applications);
- Donato D'Ambrosio, Georgios Sirakoulis, William Spataro, Giuseppe Trunfio (High Performance Computing in Modelling and Simulation);
- Nader Bagherzadeh, Masoud Daneshtalab, Masoumeh Ebrahimi and Hamid Sarbazi-Azad (On-Chip Parallel and Network-based Systems);
- Karl-Erwin Grosspietsch and Konrad Klöckner for organizing the Work-in-Progress session.

We also thank Andrey Chechulin and Maxim Kolomeec for development and maintaining PDP 2017 web site; Euromicro Office staff for their efficient administration; Juan Guerrero and the team at Conference Publishing Services for producing these proceedings. Finally, we thank Marco Danelutto,

Chairman of the Parallel and Distributed Processing Euromicro Committee and Karl-Erwin Grosspietsch, Chairman of Euromicro, for their support.

We welcome old and new friends and colleagues. We hope you all enjoy the scientific as well the social program in the tradition of the cordial spirit of PDPs.

Igor Kotenko, *St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences*
Yiannis Cotronis, *National and Kapodistrian University of Athens*
Masoud Daneshtalab, *KTH Royal Institute of Technology*
PDP 2017 Conference General Chairs

Message from the Organizing Committee Chairs
PDP 2017

On behalf of the Organizing Committee we are pleased to welcome you to the 25nd Euromicro International Conference on Parallel, Distributed, and Network-Based Processing (PDP 2017), organized by the Computer Security Problems Laboratory of the St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS).

SPIIRAS was founded in 1978 on the basis of the Computer Science Department of Ioffe Physical and Technical Institute of the USSR Academy of Sciences. Currently the Institute is the only one scientific institution in the North-West region of Russia that does basic research in information technologies and automation. Since February, 1991 and at present Professor Rafael M. Yusupov, Corresponding Member of the Russian Academy of Sciences (RAS) is the head of the Institute. One of the first global computer and information networks in the country the Academic Network "North-West" was created. According to the Decree of the Russian Federation Government dated 12/30/ 2013 the Institute was turned over to the authority of the RF Federal Agency for Scientific Organisations (FASO). The Russian Academy of Sciences provides for the scientific and methodological guidance in regard to the Institute research activities. The Institute purpose and object of activities are to do basic, prediscovery and applied scientific research aimed at the acquisition of new knowledge in the area of informatics and automation; the development of control methods, and information and telecommunication technologies applicable to solving actual scientific and engineering as well as social and economic problems, including those of interdisciplinary nature.

St. Petersburg is Russia's second-largest city after Moscow and situated on the Neva River, at the head of the Gulf of Finland on the Baltic Sea. It was the imperial capital for two centuries; it was founded by tsar Peter the Great in 1703. It remains Russia's cultural center, with venues like the Hermitage, one of the largest art museums in the world, the State Russian Museum showcasing Russian art, from Orthodox icon paintings to Kandinsky works, and the Mariinsky Theatre hosting opera and ballet. The historic centre of St. Petersburg and related groups of monuments constitute a UNESCO World Heritage Site. St. Petersburg is a major trade gateway, financial and industrial centre of Russia specializing in oil and gas trade, shipbuilding yards, aerospace industry, radio and electronics, software and computers; machine building, heavy machinery and transport, mining, instrument manufacture, metallurgy, chemicals, pharmaceuticals, medical equipment, publishing and printing, food and catering, wholesale and retail, textile and apparel industries, and many other businesses.

Organizing PDP 2017 has been a team effort. We would like to thank all the members of the St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences who have contributed so much of their time and enthusiasm to the running of PDP 2017.

We thank Anatoly Tkach, Evgeny Silla, Vasily Desnitsky, Igor Saenko, Andrey Chechulin, Elena Doynikova, Alexander Branitskiy, Andrey Fedorchenko, Mikhail Bulgakov, Maxim Kolomeec, Alexei Kushnerevich and Dmitry Levshun for hard and efficient work on organization of the PDP 2017; the St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences for providing the setting for PDP 2017; the service agency Monomax for their support with accommodation booking and events organization. The PDP 2017 conference was supported by the grant of Russian Science Foundation (RSF) #15-11-30029.

We wish you an enjoyable stay in St. Petersburg.

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