Call for Papers

Special Issue on

Parallel and Distributed Processing: Advances and Perspectives on Architectures and Applications

Guest Editors
Masoud Daneshtalab, Mälardalen University, Sweden (masoud.daneshtalab@mdh.se)
Saad Mubeen, Mälardalen University, Sweden (saad.mubeen@mdh.se)
Moris Behnam, Mälardalen University, Sweden (moris.behnam@mdh.se)
Alexandra Jimborean, Uppsala University, Sweden (alexandra.jimborean@it.uu.se)

Aims and Scope
Recent directions in research and technological studies have shown that further research is required for developing computing infrastructures, models to support new emerging architectures, programming models, tools to simulate and evaluate new architectures, and programming languages that are appropriate for new and emerging computationally and data intensive applications, such as those in healthcare, biomedical and biosciences, chemistry and physics. Several challenges have to be addressed in order to create large scale parallel and distributed computing systems that meet current application requirements. Most of them are related to system architectures, algorithms, big data processing, and programming models. These issues need to be addressed under joint efforts from different areas, such as networking and systems, software and architecture, embedded systems, multi-processors on-chip. The papers in this special issue will constitute a representative sample of the latest developments in these areas and will cover some of the above-mentioned aspects.

Topics
The special issue is intended to focus on the above aspects and will solicit papers that are presented at the 28th Euromicro Conference on Parallel, Distributed, and Network-Based Processing (PDP 2020) and address theoretical and experimental work related to parallel and distributed processing. Papers are solicited from, but are not limited to, the following parallel and distributed computing topics:
- Parallel computing: massively parallel machines; embedded parallel and distributed systems; multi- and many-core systems; GPU and FPGA based parallel systems; parallel I/O; memory organisation.
- Distributed and Network-based Computing: Cluster, Grid, Web and Cloud computing; mobile computing; interconnection networks.
- Big Data: large scale data processing; distributed databases and archives; large scale data management; data intensive applications.
- Models and Tools: programming languages and environments; runtime support systems; performance prediction and analysis; simulation of parallel and distributed systems.
- Systems and Architectures: novel system architectures; high data throughput architectures; service-oriented architectures; heterogeneous systems; shared-memory and message-passing systems; middleware and distributed operating systems; dependability and survivability; resource management.
- Advanced Algorithms and Applications: distributed algorithms; multi-disciplinary applications; computations over irregular domains; numerical applications with multi-level parallelism; real-time distributed applications.

**Tentative Schedule**
- Select papers and invite authors: 15 May 2020
- Extended version submission: 31 August 2020
- Notification: 15 November 2020
- Revision submission: 15 January 2021
- Final notification: 15 April 2021
- Publication: 4th quarter of 2021

**Submission Guidelines**
Authors of accepted papers at the 28th International Conference on Parallel, Distributed and Network-based Computing (PDP) will be invited to submit an extended version of their paper.

In addition, any other high quality submission that fits the topics of this special issue is welcome. All invited papers will be subjected to the same rigorous review process as the regular submissions to this special issue. Submitted articles must not have been previously published or currently submitted for publication elsewhere. For work that has been published previously in a workshop or conference, it is required that submissions to the special issue have at least 40% new content.

All submitted manuscripts must be formatted according to the *Computing*’s instructions for authors, which are available at [https://www.springer.com/607](https://www.springer.com/607). We will accept both LaTeX manuscripts (which must use the Springer templates at [https://www.springer.com/607](https://www.springer.com/607)) and Word manuscripts (for which no templates are available).

**Manuscript length**
Please note that the page limit for Special Issue submissions differs from that of regular *Computing* submissions. Manuscripts submitted to the Special Issue should not exceed 20 pages. Submissions that do not comply with this requirement are likely to be desk rejected without being reviewed.

**Submission instruction**
Manuscripts should be submitted using the online submission system at [https://www.springer.com/607](https://www.springer.com/607).
When submitting a manuscript for this Special Issue, the authors should take care to select ‘Parallel and Distributed Processing’ as the Manuscript Type for their submission.