

Editor's Note

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WELCOME to this year's first issue of the *IEEE Transactions on Parallel and Distributed Systems (TPDS)*. I am privileged to continue to serve our community as the Editor-in-Chief (EiC) of *TPDS*. I would like to start by thanking Pavan Balaji from Argonne National Laboratory and Xian-He Sun from the Illinois Institute of Technology for serving as the associate editors-in-chief (AEiC) of *TPDS*, and all of our associate editors (AE) for their outstanding efforts and dedication. I would also like to thank our authors and reviewers.

TPDS continues to be one of the healthiest IEEE transactions. At the time of the writing of this editorial (October 2020) we have received 680 submissions in 2020, and a total of 2023 submissions since January 2018. We continue to process these submissions as efficiently and effectively as possible, while maintaining a rigorous process for evaluating the excellent research contributions in this area and the high quality of the journal. Currently, the average number days from submission to first decision is less than 3 months, which is comparable to the top conferences in the field. *TPDS* is among the top IEEE transactions in terms of impact factor and downloads, and its impact factor remains the highest amongst the journal's competitors.

My goals as EiC have been to increase the visibility, relevance and impact of *TPDS* as well as the quality and timeliness of the review process, and to ensure that *TPDS* remains the premier Transactions in the field. IEEE is a hallmark of quality for technical publication. The value *TPDS* brings to the international community is in its collection of the highest quality research that is relevant to academia, industry, and laboratories. I continue to investigate new opportunities for *TPDS* to capture the best research while maintaining its emphasis on highest quality papers.

TPDS is experiencing very high submission rates and managing AE workload while ensuring timely and high-quality reviews can be challenging. I have taken a combination of steps to address this, including triaging paper that don't meet a minimum quality threshold, making sure that a balanced average load per AE is maintained, and monitoring progress and communicating with AEs as needed.

The area of parallel and distributed systems can be interpreted quite broadly, and its scope naturally overlaps with other transactions and journals. As a result, it is important to clearly articulate the focus and scope of *TPDS* and its relationship to peer transactions and journals. I have worked very closely with the AEiC and the EB to focus the journal on core areas of parallel and distributed systems and to minimize overlap with other related journals. As new research areas that naturally span multiple core areas emerge, I have worked with the EB to identify the aspects of the research that are relevant to *TPDS*. Finally, we have developed internal processes that involves the AEiC and the EB to immediately let authors know if their papers are out of scope for the journal.

This past year has been an exciting one with many initiatives and activities. I highlight these below:

1. Reproducibility Initiative:

Reproducibility is at the core of solid scientific and technical research. The ability to repeat the research that is produced is a key approach for confirming the validity of a new scientific discovery. The *TPDS* Reproducibility Initiative currently focuses on reproducible research through transparency and the availability and potential reuse of code and data. *TPDS* has partnered with Code Ocean, a cloud-based computational reproducibility platform, to pilot the post-publication peer review of code associated with articles published in *TPDS*. Authors who have published in *TPDS* can make their published article more reproducible and earn a reproducibility badge by submitting their associated code for post-publication peer review. *TPDS* is the first IEEE transaction to pilot reproducibility badging. *TPDS* currently offers two badges:

- **Code Available:** The code, including any associated data and documentation, provided by the authors is reasonable and complete and can potentially be used to support reproducibility of the published results.
- **Code Reviewed:** The code, including any associated data and documentation, provided by the authors is reasonable and complete, runs to produce the outputs described, and can support reproducibility of the published results.

Call for Supplemental Papers Evaluating Reproducibility. The *TPDS* reproducibility initiative invites authors willing to submit supplemental papers that present their experiences in replicating published results using the artifacts and/or evaluations or experiences with published artifacts. These supplemental paper submissions will be reviewed, and if accepted, they will be linked to the original publication and will be citable.

2. *TPDS Awards for Editorial Excellence*

Established in 2019, the IEEE *TPDS* Awards for Editorial Excellence recognizes exceptional contributions by members of the *TPDS* Editorial Board. The award is awarded based on factors such as the number of papers handled in the past year, turnaround time, and review quality.

The winners of the 2020 IEEE *TPDS* Award for Editorial Excellence:

- Shuibing He, Zhejiang University, China
- Dimitrios S. Nikolopoulos, Virginia Tech., USA
- Yun Yang, Swinburne University, Australia
- Weikuan Yu, Florida State University, USA
- Jidong Zhai, Tsinghua University, China
- Jianfeng Zhan, Chinese Academy of Sciences, China

The winners of the inaugural 2019 IEEE *TPDS* Award for Editorial Excellence:

- Pavan Balaji, Argonne National Laboratory, USA
- Anne Benoit, LIP, ENS Lyon, France
- Alba Cristina Magalhaes Alves de Melo, University of Brasilia, Brazil
- Bingsheng He, National University of Singapore, Singapore
- Radu Prodan, Institute of Information Technology, University of Klagenfurt, Austria

3. *Special Sections:*

We are seeing rapid and often dramatic changes in the research and technology landscapes in our field, and *TPDS* needs to respond to this dynamic and rapidly evolving publication landscape. It is important that *TPDS* responds appropriately to ensure that it continues to publish high-quality research that is relevant, interesting and timely. The *TPDS* Special Sections provides a mechanism to achieve this. Led by *Pavan Balaji, Associate Editor in Chief of Special Sections*, the special sections will focus on emerging topics with a short turnaround time. Each special section will have a call for papers, and the expected time from paper submission to online publication is approximately 6 months. In 2020, we launched the special sections on the following topics:

- Parallel and Distributed Computing Techniques for Artificial Intelligence, Machine Learning and Deep Learning.
Guest Editors:
 - Pavan Balaji (Argonne National Laboratory)
 - Jidong Zhai (Tsinghua University)
 - Min Si (Argonne National Laboratory)
- Computing Techniques for non-von Neumann Technologies
Guest Editors:
 - Scott Pakin (Los Alamos National Laboratory)
 - Christof Teuscher (Portland State University)
 - Catherine Schuman (Oak Ridge National Laboratory)
- Innovative R&D toward the Exascale Era
Guest Editors:
 - Sadaf Alam (Swiss National Supercomputing Centre, ETH Zürich)
 - Lois Curfman McInnes (Argonne National Laboratory)
 - Kengo Nakajima (University of Tokyo, RIKEN Center for Computational Science)

We welcome your suggestions for other possible focus areas for future special sections. Each special section will have a call for papers, and the expected time from paper submission to online publication is 6 months.

4. *TPDS Review Board:*

TPDS has established a review board composed of experts in the areas of focus of *TPDS*. The review board will complement our EB in performing timely and high-quality reviewing for the international research community.

The goals of the *TPDS* Review Board are three-fold:

1. to provide a pool of high-quality reviewers for *TPDS*;
2. to support the development of the next generation of leaders for *TPDS*; and
3. to recognize the contribution of high-quality reviewing to *TPDS*.

TPDS Review Board members serve an 18-month term. During that time, they commit to reviewing up to 10 manuscripts and to provide manuscript reviews within 8 weeks of assignment. They will be assigned no more than 2 papers at any one time.

The *TPDS* Editorial Board will support the development of board members in three ways:

- a. An editorial board member will serve as a “review mentor” and will be available to discuss challenging issues encountered in reviewing and to provide constructive feedback on reviews;
- b. *TPDS* will host face-to-face meetings to promote networking among the *TPDS* editorial and review board; and
- c. when *TPDS* review board members finish their term, those who performed well will become candidates for the *TPDS* editorial board.

The online and print version of the journal will list the review board next to the editorial board. This recognition and the stature of *TPDS* in the field will confer recognition on its members that is similar to a top conference program committee.

Once again, I would like to sincerely thank the AEiC and EB for their hard work and dedication, all the authors for submitting their manuscripts to *TPDS*, and all the reviewers for thorough evaluations of these manuscripts.

I hope you will continue to submit your best work to *TPDS*.

Manish Parashar, Fellow
Editor-in-Chief

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