Editorial

Manish Parashar, *Fellow, IEEE*

Dear Colleagues

It is with tremendous gratitude that I am writing the final editorial of my tenure as Editor-in-Chief of the IEEE Transactions on Parallel and Distributed Systems (TPDS). It has been a privilege to serve our community in role since 2018. I am also delighted to announce that Professor Xian-He Sun has been appointed as the next EiC and will start his term on January 01, 2023. Xian-He brings rich experience and leadership to TPDS and provides significant continuity with his experience serving alongside me in his previous role as an Associate Editor-in-Chief (AEiC) for *TPDS*. He has a distinguished record of service and research leadership, and I'm confident he will provide excellent leadership and management of *TPDS* for our broad research community. Please join me in congratulating Xian-He on his new appointment. His brief biography appears below.

My goal as EIC has been to work with the Editorial Board (EB) to increase the visibility, relevance, and impact of TPDS, as well as the quality and timeliness of the review process, to ensure that TPDS is the premier Transactions in the field. IEEE is a hallmark of quality for technical publication. TPDS brings to the international community a collection of the highest quality research relevant to academia, industry, and laboratories. As EiC, I investigated new opportunities for TPDS to capture the best research while maintaining its emphasis on the highest quality papers.

TPDS continues to be a very healthy journal. At the time of writing of this editorial (November 2022), we have received 685 submissions this year, and 3710 submissions since January 2018. We processed 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. Managing the high submission rates and the workload of the Associate Editors (AEs) while ensuring timely and high-quality reviews can be challenging. I have taken a combination of steps to address this challenge, including triaging papers that do not meet a minimum quality threshold, making sure that a balanced average load per AE is maintained, and monitoring the progress of AEs and communicating with them as needed. 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. Our average acceptance rate for the past 5 years has been less than 25%, which reflects our rigorous process for evaluating the top-tier research contributions in this area. TPDS is among the top IEEE transactions and a top publication in the field.

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 AEiCs 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 involve the AEiC and the EB to immediately let authors know if their papers are out of scope for the journal.

My tenure as EiC has been an active one. In addition to completing a successful 5-year periodical review by the IEEE TAB Periodicals and Review Committee (PRAC), I have enjoyed working with AEiCs and the EB on several initiatives designed to increase the quality and impact of the journal. I highlight some of them below.

TPDS Reproducibility Initiative[1]**:** Reproducibility is foundational to scientific and technical research, and TPDS is committed to supporting the reproducibility of the research it publishes through the transparency, availability, and potential reuse of code and data associated with its publications. Specifically, TPDS has piloted a postpublication peer review of code associated with articles published in TPDS. Authors who have published in TPDS can make their published articles more visible and reproducible by earning a reproducibility badge. TPDS is the first IEEE transaction to pilot reproducibility badging and offers the following badges: Code/Data Available, Code/Data Reviewed, Results Reproducible.

The nature of research in parallel and distributed systems covered by TPDS makes it challenging to evaluate code and data for reproducibility. Consequently, TPDS piloted an alternate approach by which members of the community can

1. M. Parashar, "EiC Editorial – Advancing Reproducibility in Parallel and Distributed Systems Research" in IEEE Transactions on Parallel & Distributed Systems, vol. 33, no. 09, pp. 2010-2010, 2022. doi: 10.1109/TPDS.2021.3137871

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submit short, supplemental 'critique' papers that present their experiences in reproducing published results using the artifacts and/or evaluations or experiences with published artifacts. These supplemental paper submissions are reviewed and, if accepted, are linked to the original publication and citable, serving to help validate the reproducibility of the original publication. TPDS is also partnering with national providers of computing resources to support the evaluation of artifacts. TPDS has already badged over a dozen papers, and this number is growing quickly. I would like to thank Rafael Tolosana Calasanz, the AEiC for Reproducibility and the Reproducibility Editorial Board (and the Reproducibility Review Board) for overseeing the badging process.

Special Sections: We are seeing rapid and often dramatic changes in the research and technology landscapes in our field, and TPDS needs to respond 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, AEiC, 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. To date, we have published 7 very successful special sections.

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 reviews for the international research community. The TPDS Review Board aims to (1) provide a pool of high-quality reviewers for TPDS; (2) support the development of the next generation of leaders for TPDS; and (3) recognize the contribution of high-quality reviewing to TPDS. The TPDS EB will support the development of board members.

TPDS Awards for Editorial Excellence: TPDS has established *Awards for Editorial Excellence* to recognize exceptional contributions by members of the TPDS EB. The award is awarded based on factors such as the number of papers handled in the past year, turnaround time, and review quality.

I am grateful for this opportunity to have served our community in this leadership position and give thanks to all the authors who have submitted their manuscripts to *TPDS*, and to all the peer reviewers for thorough evaluations of these works, and to all the readers of this journal. Thank you as well to the AEiCs and the EB, RB and RRB for managing these submissions and reviews, and, once again, to Xian-He Sun for his service. I am extremely grateful to Ms. Christine Kurzawa Shaughnessy, Christine Torrento, and Shreya Sinha of the IEEE Publishing Operations, and Ms. Jennifer Carruth of the IEEE Computer Society, for their exceptional support on all aspects of the paper review and publication process. They are an absolute delight to work with, and I would not have survived as EiC without their help and support. I would also like to thank many others at the IEEE Computer Society for their help and support during my tenure as EiC. Finally, I would like to thank Gerry Grenier and Ken Rawson as well as Tiffany McKerahan for working with me to make the TPDS Reproducibility Initiative possible.

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

Manish Parashar
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Editor-in-Chief

Xian-He Sun (Life Fellow, IEEE) is a University Distinguished professor and the Ron Hochsprung endowed chair of Computer Science with the Illinois Institute of Technology (Illinois Tech). Before joining Illinois Tech, he worked at DoE Ames National Laboratory, with ICASE, NASA Langley Research Center, with Louisiana State University, Baton Rouge, and was an ASEE fellow with Navy Research Laboratories. He is known for his memory-bounded speedup model, also called Sun-Ni's Law, for scalable computing. His research interests include high-performance computing (HPC), memory and I/O systems, and performance evaluation and optimization. He has more than 300 publications, six patents in these areas, and is currently leading multiple large software development projects in HPC I/O systems. He is an associate editor-in-chief of *IEEE Transactions on Parallel and Distributed Systems* since 2018, and a former chair of the Computer Science Department at Illinois Tech. He received the Golden Core Award from IEEE CS society in 2017, the ACM Karsten Schwan Best Paper Award from ACM HPDC in 2019, the Ron Hocksprung Endowed Chairship from Illinois Tech in 2020, and the first prize Best Paper Award from ACM/IEEE CCGrid in 2021. More information about him can be found at his website www.cs.iit.edu/∼sun/.

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