Editorial
Opening of the 2023 Editorial Year—This Coda as Prelude of Next TVLSI Cycle With Sustained Growth

THE journey as Editor-in-Chief (EiC) of the IEEE TRANSACTIONS ON VERY LARGE SCALE INTEGRATION (VLSI) SYSTEMS (TVLSI) from 2019 to 2022 has been exhilarating. Continuing the analogy with classical music concertos in recent editorials in this journal [1], [2], [3], some movements have been somewhat tempestuous in a rapidly changing world under a pandemic. Simultaneously, fundamental transformations have taken place in the semiconductor supply chain, as well as in our life and work style through increasingly distributed cooperation models (across continents, and from the office to the home office). Other movements have been highly rewarding thanks to the concerted effort (analogy intended) of a talented and rock-solid Editorial Board, whose precious contribution has led to relentless journal improvements in many respects. And, indeed, it has been a real pleasure to work with each and every one of the members of the TVLSI Editorial Board, whose commitment to excellence has brought the journal to new heights.

More tangibly, Fig. 1 shows that the impact factor of the journal has increased by 60% from 1.74 in 2018 to 2.775 this year, which corresponds to an accelerated improvement of 1.12X/year compared to 1.07X/year in the previous decade. Impact certainly correlates with quality, which has been consistently pursued through a rigorous and timely paper review process. In particular, the thorough revision of the review process and the consistent quality pursuit of the associate editors and the reviewers has significantly reduced the acceptance rate from 37.3% in 2018 to 28.3%–30.9% in the last two years. Over the same period, the review turnaround time has been brought to 7.8 weeks from submission to first decision in regular papers (shorter for brief papers). In musical terms, the state of the journal has definitely been a consistent crescendo thanks to the harmonious interplay of all musicians within the orchestra.

As an initiative that has taken place in the same period, the alignment of our community around key grand challenges has been strengthened with several keynote papers. Through such papers, leaders in our field have shared their compelling vision on how to take VLSI systems and their applications to

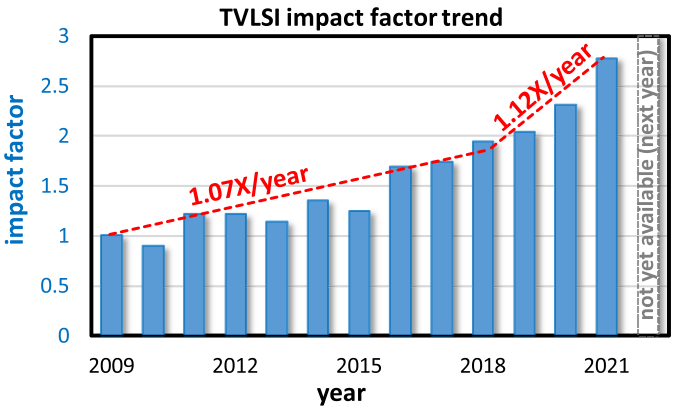

Fig. 1. Trend of impact factor of IEEE TVLSI (2022 value will be available next year).

the next level, including Dr. Vivek De (Intel), Prof. Giovanni De Micheli (EPFL), Prof. Boris Murmann (Stanford), Prof. Makoto Nagata (Kobe University), Prof. Jan Rabaey (UC Berkeley), and Prof. Kaushik Roy (Purdue). I take this opportunity to thank all of them and their teams for sharing their thought-provoking view of the future.

Deeper engagement with our community has been developed through social media channels such as the LinkedIn TVLSI page [4]. The page is intended to serve as source of exciting news and curated paper selection, as well as interaction among all the members. I personally encourage everyone in our field to follow it and further benefit from the interesting content curated by the Editorial Board. I hope that the many other initiatives started in the last four years will keep fostering engagement, cooperation, and innovation in the long run. As an initiative that will be handled by the next EiC, special issues focusing on best papers from IEEE conferences have been started and will come about in 2023.

To close the loop on the several editorials published in this journal over the past four years, significant advances have been made in several of the grand challenges that were highlighted in the first editorial [5]:

1) sustain the Internet of Things in its scaleup toward the trillions of connected devices by removing its

Digital Object Identifier 10.1109/TVLSI.2022.3228023

economic, logistical and environmental sustainability roadblocks [6];
2) manage a wider range of transactions with distributed ledgers (e.g., blockchain);
3) enable ubiquitous zero-trust edge security even at the lower end (and cost) of connected devices [7];
4) make vehicles truly autonomous, connected and collaborative;
5) enhance the human body with new capabilities with augmented senses and powers (e.g., multiscale vision, multimodal sense fusion);
6) make intelligent and assistive robots part of our daily life;
7) enable distributed machine intelligence from edge to cloud while expanding learning at the edge (e.g., wearable, biomedical devices, and smart objects);
8) make information gathering/funneling/retrieval (e.g., from sensors, databases, and web) proactive and context-aware, moving away from "pushing buttons" (i.e., having relevant information being pushed to us as recommendation systems currently do in much narrower applications);
9) sharing goods and services more responsibly, fairly, and efficiently (sharing economy), progressively decoupling socioeconomic progress from intensive use of resources (e.g., through objects augmented with inexpensive smart sensing and tracking);

and many others. We have progressed on the above challenges, and they certainly remain highly relevant for the coming years. Overall, it is still a long way.

Being the conclusive editorial of this term, it is my pleasure to acknowledge the irreplaceable role of the "orchestra," and hence the many people who have made this journey along with its upward trajectory possible (and remarkable too). First of all, I would like to thank the members of the TVLSI Steering Committee for their constant support and advice. I am also very happy to acknowledge the incredible work and contribution of the Editorial Board as a whole, and of each of its members for making this journey so fruitful and rewarding. I am particularly proud of the TVLSI Editorial Board for its professionalism, constructive attitude, and focus on quality at every step of the way. Overall, the professional and personal relationships with the Editorial Board members will definitely outlast this term as EiC, and will be a tangible sign of our common sense of purpose in pursuing excellence while serving our community. I am also indebted to the Associate Editors-in-Chief Prof. Pasquale Corsonello and Prof. Mircea Stan, as well as Stacey Weber as Editorial Assistant. Their experience, dedication and energy have been essential to the growth of the journal, and to make the EiC workload manageable and well-focused. My deepest appreciation also goes to the many reviewers who have contributed with their time and expertise to strengthen the core values of our journal, and to improve quality continuously in the review process.

Finally, I trust that the central role of TVLSI at the crossroad of the Circuits and Systems (CASS), Computer (CS), and Solid-State Circuits (SSCS) Society will help nurture closer collaboration among the three communities. In the end, journals and societies are all about people and their interactions. I take this opportunity to thank our three IEEE societies for their continuous support.

To the "orchestra," thank you all for your fine craft and dedication. We now prepare to transform this "coda" at the end of this term into the "prelude" of the next term with a new EiC. I wish you all continued success, and an accelerated growth trajectory for our journal in the coming years!

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Prof. Alioto is the Editor-in-Chief of IEEE TRANSACTIONS ON VERY LARGE SCALE INTEGRATION (VLSI) SYSTEMS and was the Deputy Editor-in-Chief of IEEE JOURNAL ON EMERGING AND SELECTED TOPICS IN CIRCUITS AND SYSTEMS. He is/was Distinguished Lecturer of the IEEE Solid-State Circuits Society (2020–2021) and the IEEE Circuits and Systems Society (2022–2023, 2009–2010). He is also the Chair of the Distinguished Lecturer Program of IEEE CASS (2023–2024), for which he was a member of the Board of Governors. In the last five years, he has given more than 50 invited talks in top conferences, universities, and leading semiconductor companies. He served as a Guest Editor of several IEEE journal special issues (e.g., IEEE JOURNAL OF SOLID-STATE CIRCUITS, IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—I: REGULAR PAPERS, IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—II: EXPRESS BRIEFS, and IEEE JOURNAL ON EMERGING AND SELECTED TOPICS IN CIRCUITS AND SYSTEMS), and an Associate Editor of a number of IEEE and ACM journals. He is/was Technical Program or General Chair in numerous conferences (e.g., ISCAS, SOCC, ICECS, NEWCAS, APCCAS, and MWSCAS), and is currently in the IEEE "Digital Architectures and Systems" ISSCC subcommittee, and the IEEE ASSCC Technical Program Committee.