



# Editorial

## JCISE Editorial – August 2022

Established in 2001, *Journal of Computing and Information Science in Engineering* (JCISE) is the flagship ASME transactions on computational science in engineering. Currently, it is co-sponsored by ASME's Computers & Information in Engineering Division and Design Engineering Division.

The authorship and readership of the journal have grown steadily in the past two decades under the leadership of three editors, Professors Jami Shah, Bahram Ravani, and Satyandra Gupta. The scope of the journal has naturally evolved along with the advancement of computational science and technologies. It covers all main topics of computation related to engineering, such as parallel computation, cloud computing, edge computing, cybersecurity, graphical processing unit, symbolic computing, virtual reality, augmented reality, artificial intelligence, and machine learning. These new computing techniques have been broadly used and extended by the JCISE authors in a wide spectrum of mechanical engineering applications, including product design, manufacturing process design, shape and topology optimization, reliability analysis, modeling and simulation, manufacturing systems, energy systems, machine health monitoring, cyber-physical-social systems, robotics, and engineering information system. Various novel and impactful methods have been published in JCISE, including the subjects of computational geometry, solid modeling, geometric processing, feature recognition, design optimization, knowledge-based engineering, artificial intelligence, machine learning, digitalization, complex systems engineering, computer-aided conceptual design, sustainable design and manufacturing, uncertainty quantification, predictive science, scientific computing, digital twins, multi-scale simulation, multi-physics simulation, design decision making, collaborative engineering, engineering informatics, cybersecurity in manufacturing, computational metrology, reverse engineering, computer-aided manufacturing, process planning, process monitoring, additive manufacturing, robotics in manufacturing, human-computer interface, simulation-based training, human modeling, and human-robot collaborations.

When JCISE was established, the founding editorial board includes the editor, Jami Shah, and associate editors, Harry Cheng, Deba Dutta, Sankar Jayaram, Pradeep Khosla, Martti Mantyla, Dana Nau, Nicholas Patrikalakis, Ravi Rangan, David Rosen, Simon Szykman, Susan Urban, and Paul Wright. In the past two decades, a large number of researchers in our community have served as the associate editors, including Guarav Ameta, Nabil Anwer, William Bernstein, Monica Bordegoni, Sean Callahan, Matthew Campbell, Yong Chen, Chih-Hsing Chu, Jonathan Corney, Richard Crawford, Nancy Dorigi, Ehsan Esfahani, Francesco Ferrise, Anath Fischer, Shuming Gao, Chris Geiger, Ashok Goel, Ian Grosse, Satyandra Gupta, Balan Gurumoorthy, Bin He, Ajay Joneja, Leo Joskowicz, Yoshinobu Kitamura, Ashok Kumar, Tsz Ho Kwok, Kincho Law, Kunwoo Lee, Ying Liu, Yusheng Liu, Yan Lu, Yongsheng Ma, Mahesh Mani, Chris McMahan, Sara McMains, John Michopoulos, Duhwan Mun, Saigopal Nelaturi, James Oliver, Yayue Pan, Jitesh Panchal, Christiaan Paredis, Anurag Purwar, Xiaping Qian, Rahul Rai, P.V.M. Rao, Caterina Rizzi, Joshua Summers, Kazuhiro Saitou, Vadim

Shapiro, Vijay Srinivasan, Yu Song, Krishnan Suresh, Atul Thakur, Conrad Tucker, Jan Vandenbrande, Charlie Wang, Jun Wang, and Kristina Wärmefjord. In addition to regular issues, many special issues have been edited by our guest editors, including David Anderson, ChiKit Au, Jan Aurich, Pere Brunet, Yanlong Cao, Marina Carulli, Seung-Kyum Choi, Alain Desrochers, Delcie Durham, Gershon Elber, Vincenzo Ferrero, Amir Gandomi, Franca Giannini, Colombo Giorgio, Imre Horváth, Raffaello Levi, Chris McComb, Marc Mignolet, Nicholas Meisel, Chia-Hsiang Menq, Andras Kemeny, Thenkurussi Kesavadas, Marcia O'Malley, Alexander Pasko, Sudarsan Rachuri, Mark Shephard, Kenji Shimada, Andrés Gómez de Silva Garza, Timothy Simpson, Christian Soize, Ram Sriram, Binil Starly, Eswaran Subrahmanian, Bob Wilhelm, and Paul Witherell. The digital media-associated editors, Vinayak Krishnamurthy and Douglas Van Bossuyt, help maintain the digital collections associated with the paper publications. We thank all of our associate editors and guest editors for their time and efforts to keep the high quality of JCISE publications.

JCISE also has an advisory board that advises on the strategic development of the journal. The current advisory board members include the past editors, Jami Shah, Bahram Ravani, and Satyandra Gupta, as well as several prominent researchers in our international community, including Janet Allen, Sanjay Dhande, Imre Horváth, Ram Sriram, and Jianrong Tan. Prof. Allen is a Professor and the John and Mary Moore Chair at the University of Oklahoma and well known for her various research contributions in system design and realization, particularly on robust design under uncertainty, decision making, and design optimization. Prof. Dhande is the former Director of the Indian Institute of Technology Kanpur and a Fellow of the Indian National Academy of Engineering. He has been the founder and mentor director of several national institutions in science and technology in India. Prof. Horváth is a Professor Emeritus of the Delf University of Technology and is a pioneer in expert system, computer-aided conceptual design, and design of cyber-physical-social systems. Dr. Sriram is the Chief of the Software and Systems Division, Information Technology Laboratory, at the National Institute of Standards and Technology. He is the leader in the fields of product lifecycle management, knowledge engineering, and engineering informatics. Prof. Tan is the Head of the Institute of Design Engineering at Zhejiang University and an Academician of the Chinese Academy of Engineering. He also serves on several national advisory boards on digitalization in design and manufacturing in China. In the past, Prof. David Auslander of UC Berkeley, Dr. Matthew Bement of LANL, Prof. Chris Hoffmann of Purdue University, Prof. Yong Se Kim of Sungkyunkwan University, Dr. David Lee, Prof. Alan Parkinson of Brigham Young University, Prof. Richard Riesenfeld of University of Utah, and Prof. Paul Wright of UC Berkely also served on the advisory board. We would like to thank the present and past advisory board members for their long-term contributions to JCISE.

The continuous evolution of computer technologies always brings new research opportunities to engineering. JCISE serves as

the pivot and fosters the interdisciplinary research in computational and information science for engineering. We look forward to its expanding role in scientific communication to serve the engineering community worldwide.

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