Preface

Computational Science and Engineering (CSE) is a relatively new paradigm for scientific research and engineering design in which large-scale simulation, data analysis, and high performance computing play a central role. In fact, the applications of CSE can be seen in almost all disciplines. Engineering and science problems have been solved historically using experimental testing and/or mathematical analysis. Some examples of engineering problems are fluid flows and structural properties associated with aircraft, ships, submarines, automobiles, spacecraft, jet and rocket propulsion engines, buildings and other structures. Other examples relate to electrical power generation, weather, rivers and oceans, electrical equipment, computer hardware, radar, antennas, chemical reactions and processes, fuel cells, petroleum recovery and refining, agricultural and construction equipment, refrigeration and air conditioning, air and water pollution, energy conversion and storage, and many others. Many of these problems can now be solved efficiently as computational simulations of mathematical models that represent the relevant physical phenomena arising in each problem.

The Third International Conference on Computational Science and Engineering 2018 (ICCSE2018) will provide a unique forum to exchange innovative research ideas, recent results, and share experiences among researchers and practitioners in a broad-range of topics. This volume presents a theory and practice of ongoing research in computational science and engineering. The focuses of this volume is on a broad range of methodological approaches and empirical references points including advanced networking and communications, applications of computational science and engineering, computational science and engineering in education and finance, computational systems and technology, machine learning and data science, modeling and simulation and numerical and discrete algorithms.

In concluding, we would also like to express our deep gratitude and appreciation to all the program committee members, panel reviewers, organizing committees and volunteers for your efforts to make this conference a successful event. It is worth emphasizing that much theoretical and empirical work remains to be done. It is encouraging to find that more research on computational science and engineering is still required. We sincerely hope the readers will find this book interesting, useful and informative and it will give then a valuable inspiration for original and innovative research.
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