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## Preface

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**Biographical notes:** Che-Lun Hung received his BS and MS from the Department of Information Engineering and Computer Science at Feng Chia University in 1999 and 2001, respectively, and PhD from the Department of Computer Science at National Tsing Hua University in 2010. In the same year, he joined the Department of Computer Science and Communication Engineering at Providence University as an Assistant Professor. His research interests are in the areas of parallel and distributed computing, cloud computing, proteomics, genomics, systems biology and next-generation sequencing.

Yi-Ping You received his BS from the Department of Computer Science and Information Engineering at National Chi Nan University in 1998, and MS and PhD from the Department of Computer Science at National Tsing Hua University in 2007 and 2012, respectively. In the same year, he joined the Department of Computer Science at National Chiao Tung University as an Assistant Professor. His research interests are in the areas of optimising compilers, compilers for low power and embedded systems, software power management and power-aware operating systems.

Chuan Yi Tang received his BS in Electrical Engineering and MS in Computer Science from National Tsing Hua University, Taiwan, in 1980 and 1982, respectively. He obtained his PhD from the Department of Computer Science and Information Engineering at National Chiao Tung University, Taiwan, in 1985. In the same year, he joined the Faculty of Computer Science at National Tsing Hua University, where he became a Full Professor in 1992. Currently, he is the President of Providence University, Taiwan. His research interests include the analysis and design of algorithms, computational molecular biology, bioinformatics and parallel processing.

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High performance computing is a field of study that focuses on parallel and distributed system architectures, programming languages and models and scientific applications. In the past decade, a number of architectures, such as cluster, grid, cloud computing platform, embedded and multi-core systems, have been developed to accelerate many computation-intensive and data-intensive problems.

Additionally, new programming languages and models – such as Map/Reduce, OpenMP, OpenCL and CUDA, amongst others – have been applied to these architectures.

Newer and more advanced technologies implemented in parallel and distributed systems have gained more and more attention in recent years. This special issue therefore strives to foster state-of-the-art research pertaining to high performance computing in the area of advanced technologies and innovative applications.

In this context, ‘Novel architectures and accelerators for high performance computing’ has become an active research field. The Workshop on Compiler Techniques for High-Performance and Embedded Computing (CTHPC

2011) and The International Workshop on Embedded Multi-Core computing and Applications (EMCA 2011) were held on June 2–3, 2011 and September 2–4, 2011 at Taiwan and Canada, respectively. Revised versions of selected contributed manuscripts in both workshops have been included in this issue.