Editorial

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Biographical notes: Hamid R. Arabnia is a Full Professor of CS at the University of Georgia (USA since 1987. His research interests include HPC and applications. He is the Editor-in-Chief of *Journal of Supercomputing* (Springer). He has received a number of awards, including: the Distinguished Service Award (presented to him in 2006 by Professor Barry Vercoe/MIT); the 'Outstanding Achievement Award in Recognition of His Leadership and Outstanding Research Contributions to the Field of Supercomputing' (presented to him in 2007 at Harvard University Medical School; signatories: President of IEEE/SMC). He has about 300 publications in his area of research. He has been a Co-PI on $7,250,000 funded projects/initiatives. In addition, during his tenure as Graduate Coordinator of CS (2002–2009), he secured the largest level of funding in the history of the department for supporting the research and education of MS/PHD students.

It gives me great pleasure to introduce this collection of papers. Preliminary versions of these papers were published in the 2008 International Conference on Modelling, Simulation and Visualisation Methods (MSV'08, http://www.world-academy-of-science.org/), 14–17 July 2008, at Monte Carlo Resort, Las Vegas, Nevada, USA (as part of the WORLDCOMP'08 Congress).

The academic co-sponsors of MSV/WORLDCOMP'08 included: Computational Biology and Functional Genomics Laboratory, Harvard University, Cambridge, Massachusetts, USA; International Society of Intelligent Biological Medicine; Horvath Laboratory, University of California, Los Angeles (UCLA), USA; Minnesota Supercomputing Institute, University of Minnesota, USA; Functional Genomics Laboratory, University of Illinois at Urbana-Champaign, USA; BioMedical Informatics & Bio-Imaging Laboratory, Georgia Institute of Technology and Emory University, Atlanta, Georgia, USA; Intelligent Data Exploration and Analysis Laboratory, University of Texas at Austin, Austin, Texas, USA; Biomedical Cybernetics Laboratory, HST of Harvard University and MIT, USA; Center for the Bioinformatics and Computational Genomics, Georgia Institute of Technology, Atlanta, Georgia, USA; Harvard Statistical Genomics and Computational Laboratory, Harvard University, Cambridge, Massachusetts, USA; Bioinformatics & Computational Biology Program, George Mason University, Virginia, USA; Hawkeye Radiology Informatics, Department of Radiology, College of Medicine, University of Iowa, Iowa, USA; Medical Image HPC & Informatics Lab (MiHi Lab), University of Iowa, Iowa, USA; The University of North Dakota, Grand Forks, North Dakota, USA; Prince Sultan University (PSU), Saudi Arabia; Institute for Informatics Problems of the Russian Academy of Sciences, Moscow, Russia and NEMO/European Union at Institute of Discrete Mathematics and Geometry, TU Vienna.

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Organisers and other co-sponsors at-large include: a number of university faculty members and their staff (names appear on the cover of the proceedings); World Academy of Science (www.world-academy-of-science.org/); Computer Science Research, Education, and Applications Press; High Performance Computing for Nanotechnology (HPCNano); International Technology Institute (ITI); GridToday; HPCwire and Hodges' Health (H2CM), UK. In addition to the above, several publishers of computer science and computer engineering books and journals, chapters and/or task forces of computer science associations/organisations from 12 countries, and developers of high-performance machines and systems provided significant help in organising the conference.

Each paper submitted to MSV'08 Conference was peer-reviewed by two experts in the field. The papers were evaluated for originality, soundness, clarity, and technical contents. The paper acceptance rate was 28% (for regular papers). For this special issue, we selected the papers that received the highest overall evaluation points. This collection of papers covers the application side of simulation and modelling. I hope that you enjoy reading these papers as much as we did.

I would like to take this opportunity to thank Dr. Yan Luo (Chief Editor, *IJCAET*) for the professional service and leadership he is providing to the research community.