Preface: Algorithms, complexity and models of computation

This Special Issue arises from the conference Theory and Applications of Models of Computation 2007, held at Fudan University, Shanghai in May 2007. Theory and Applications of Models of Computation (TAMC) is an international conference series with an interdisciplinary character, bringing together researchers working in computer science, mathematics and the physical sciences. This interdisciplinary approach, with an emphasis on the theory of computation in a broad sense, gives the series its special appeal within China and internationally.

TAMC 2007 was the 4th conference in the series. The previous meetings were held May 17–19, 2004 in Beijing, May 17–20, 2005 in Kunming, and May 15–20, 2006, in Beijing, China. Subsequent TAMC meetings include the 5th Annual Conference on Theory and Applications of Models of Computation (TAMC’08), held in Xi’an, and the 6th Annual Conference on Theory and Applications of Models of Computation (TAMC’09) to be held in ChangSha, from May 26 to May 30, 2009. It is expected that 2010 will see the first TAMC meeting outside of China, provisionally planned for Prague in the Czech Republic.

The enthusiasm with which TAMC 2007 has been received by the scientific community is evident in the large number of quality articles submitted to the conference. There were over 500 submissions, originating from all over the world. This presented the Programme Committee with a major assessment task. The Programme Committee finally selected sixty-seven papers for presentation at the conference and inclusion in the LNCS pre-proceedings volume. This results in an acceptance rate of just over 13%, making TAMC an extremely selective conference, compared with other leading international conferences.

Drawing on the best of these contributions, this Special Issue contains eleven invited papers around the theme of Algorithms, Complexity and Models of Computation, all refereed to the usual high standards of TCS. This is one of three special issues for TAMC 2007, each on a different thematic area, to be published by Theoretical Computer Science, series A, Mathematical Structures in Computer Science, and the Journal of Computer Science and Technology.

The TAMC conference series arose naturally in response to important scientific developments affecting how we compute in the twenty-first century. At the same time, TAMC is already playing an important regional and international role, and promises to become a key contributor to the scientific resurgence seen throughout China and other parts of Asia. TAMC is particularly recognised as addressing the need to develop a strong theoretical base for computer scientific progress, and has become the most truly international on the emergent conference scene. The excellence of the papers to be found here are fitting signifiers of this growing international involvement.

We would like to thank our fellow Programme Committee members, and the many outside referees they called on, for the hard work and expertise which they have brought to the difficult selection process consequent on the unprecedented volume of submissions to TAMC 2007:

Giorgio Ausiello (Rome, Italy), Eric Bach (UW Madison), Jin-Yi Cai (Wisconsin), Nicolo Cesa-Bianchi (Milano, Italy), Jianer Chen (Texas A&M University), Yijia Chen (Shanghai Jiaotong University), Francis Chin (Hong Kong), C.T. Chong (Singapore), Kyung-Yong Chwa (KAIST, Korea), Decheng Ding (Nanjing University), Rod Downey (Wellington), Martin Dyer (Leeds), Rudolf Fleischer (Fudan University), Oscar Ibarra (UC Santa Barbara), Hiroshi Imai (University of Tokyo), Kazuo Iwama (Kyoto University), Tao Jiang (University of California-Riverside/Tsinghua, Beijing), Satyanarayana Lokam (Microsoft Research-India), D. T. Lee (Academia Sinica, Taipei), Anghsheng Li (Institute of Software, CAS), Giuseppe Longo (Paris, France), Tian Liu (Beijing University), Rudiger Reischuk (Universitat zu Lubeck), Rocco Servedio (Columbia University), Alexander Shen (Institute for Information Transmission Problems, Moscow), Yaoyun Shi (Universityof Michigan, Ann Arbor), Ted Slaman (UC Berkeley), Xiaoming Sun (Tsinghua University), Luca Trevisan (UC Berkeley), Christopher Umans (Cal Tech), Alasdair Urquhart (University of Toronto), Hanpin Wang (Beijing University), Osamu Watanabe (Tokyo Institute of Technology), Zhiwei Xu (Institute of Computing Technology, CAS), Frances Yao (City University of Hong Kong), Mingsheng Ying (Tsinghua University, Beijing).

And, most importantly, we would like to thank the participants and speakers for making the event such a resounding success. We also express our appreciation to Professor Giorgio Ausiello and the members of the Editorial Board of Theoretical Computer Science for their encouragement and advice throughout the preparation of TAMC 2007, and this Special Issue.

0304-3975/$ – see front matter © 2008 Elsevier B.V. All rights reserved.
Of course TAMC 2007 would not have been possible without the support of our sponsors: The Science and Technology Commission of Shanghai Municipality, Software School of Fudan University, Institute of Software, Chinese Academy of Sciences, Microsoft Research, Asia, and we therefore gratefully acknowledge their help in the realisation of the conference from which this Special Issue has arisen.

S. Barry Cooper *
School of Mathematics,
University of Leeds,
Leeds LS2 9JT, UK
E-mail address: pmt6sbc@leeds.ac.uk.

Hong Zhu
Department of Computer Science and Engineering,
Fudan University,
Shanghai 200433, China
E-mail address: hzhu@fudan.edu.cn.

* Corresponding editor.