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Shaozi Li
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Editors

Frontier and Future Development of Information Technology in Medicine and Education

ITME 2013

Volume 1

Springer

Shaozi Li · Qun Jin · Xiaohong Jiang
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Message from the ITME 2013 General Chairs

ITME 2013 is the 5th International Symposium on IT in Medicine and Education. This conference took place in July 19–21, 2013, in Xining, China. The aim of the ITME 2013 was to provide an international symposium for scientific research on IT in Medicine and Education. It was organized by Qinghai University, Future University Hakodate, Xiamen University, Shandong Normal University. ITME 2013 is the next event in a series of highly successful international symposia on IT in Medicine and Education, ITME-12 (Hokkaido, Japan, August 2012), ITME-11 (Guangzhou, China, December 2011), ITME-09 (Jinan, China, August 2009), ITME-08 (Xiamen, China, December 2008).

The papers included in the proceedings cover the following topics: IT Application in Medicine Education, Medical Image Processing and compression, e-Health and e-Hospital, Tele-medicine and Tele-surgery, Standard in Health Informatics and cross-language solution, Computer-Aided Diagnostic (CAD), Health informatics education, Biomechanics, modeling and computing, Digital Virtual Organ and Clinic Application, Three Dimension Reconstruction for Medical Imaging, Hospital Management Informatization, Construction of Medical Database, Medical Knowledge Mining, IT and Biomedicine, IT and Clinical Medicine, IT and Laboratory Medicine, IT and Preclinical Medicine, IT and Medical Informatics, Architecture of Educational Information Systems, Building and Sharing Digital Education Resources on the Internet, Collaborative Learning/ Training, Computer Aided Teaching and Campus Network Construction, Curriculum Design and Development for Open/Distance Education, Digital Library, e-Learning Pedagogical Strategies, Ethical and Social Issues in Using IT in Education, Innovative Software and Hardware Systems for Education and Training, Issues on University Office Automation and Education Administration Management Systems, Learning Management Information Systems, Managed Learning Environments, Multimedia and Hypermedia Applications and Knowledge Management in Education, Pedagogical Issues on Open/Distance Education, Plagiarism Issues on Open/Distance Education, Security and Privacy issues with e-learning, Software Agents and Applications in Education. Accepted and presented papers highlight new trends and challenges of Medicine and Education. The presenters showed how new research could lead to novel and innovative applications. We hope you will find these results useful and inspiring for your future research.

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We would like to express our sincere thanks to Steering Chair: Zongkai Lin (Institute of Computing Technology, Chinese Academy of Sciences, China). Our special thanks go to the Program Chairs: Shaozi Li (Xiamen University, China), Ying Dai (Iwate Prefectural University, Japan), Osamu Takahashi (Future University Hakodate, Japan), Dongqing Xie (Guangzhou University, China), Jianming Yong (University of Southern Queensland, Australia), all program committee members, and all the additional reviewers for their valuable efforts in the review process, which helped us to guarantee the highest quality of the selected papers for the conference.

We cordially thank all the authors for their valuable contributions and the other participants of this conference. The conference would not have been possible without their support. Thanks are also due to the many experts who contributed to making the event a success.

June 2013

Yongnian Liu
Xiaohong Jiang
James J. (Jong Hyuk) Park
Qun Jin
Hong Liu

Message from the ITME 2013 Program Chairs

Welcome to the 5th International Symposium on IT in Medicine and Education (ITME 2013), which will be held on July 19–21, 2013, in Xining, China. ITME 2013 will be the most comprehensive conference focused on the IT in Medicine and Education. ITME 2013 will provide an opportunity for academic and industry professionals to discuss the recent progress in the area of Medicine and Education. In addition, the conference will publish high-quality papers which are closely related to the various theories and practical applications on IT in Medicine and Education. Furthermore, we expect that the conference and its publications will be a trigger for further related research and technology improvements in these important subjects.

For ITME 2013, we received many paper submissions, after a rigorous peer review process; only very outstanding papers will be accepted for the ITME 2013 proceedings, published by Springer. All submitted papers have undergone blind reviews by at least two reviewers from the technical program committee, which consists of leading researchers around the globe. Without their hard work, achieving such a high-quality proceeding would not have been possible. We take this opportunity to thank them for their great support and cooperation. We would like to sincerely thank the following keynote speakers who kindly accepted our invitations, and, in this way, helped to meet the objectives of the conference: Prof. Qun Jin, Department of Human Informatics and Cognitive Sciences, Waseda University, Japan, Prof. Yun Yang, Swinburne University of Technology, Melbourne, Australia, Prof. Qinghua Zheng, Department of Computer Science and Technology, Xi'an Jiaotong University, China. We also would like to thank all of you for your participation in our conference, and also thank all the authors, reviewers, and organizing committee members.

Thank you and enjoy the conference!

Shaozi Li, China
Ying Dai, Japan
Osamu Takahashi, Japan
Dongqing Xie, China
Jianming Yong, Australia

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