

Preface

Nowadays, the systems and methods of artificial intelligence find a wide spectrum of effective—and sometimes unexpected—applications in different fields of technologies and sciences. One of these areas is medical engineering, in which their application is aimed at increasing the effectiveness of diagnosing various diseases and selecting appropriate ways of treatment. The rapid development of artificial intelligence systems requires the intensification of training of a growing number of relevant specialists. At the same time, artificial intelligence systems have significant perspectives of their application inside education technologies themselves for improving the quality of training of specialists taking into account personal characteristics of such specialists and also the emergence of new computer devices.

In digital systems of artificial intelligence, scientists try to reproduce inherited intellectual abilities of human and other biological organisms. The profound study of genetic systems and inherited biological processes can give new approaches to create more and more effective methods of artificial intelligence. For this reason, intensive development of biomathematical studies on patents of living nature is required, which ensure noise immunity of genetic information, its quasi-holographic features, its connection with the Boolean algebra of logic used in technical systems of artificial intelligence, etc. In other words, study of genetic systems and creation of methods of artificial intelligence go in parallel manner to enrich each other.

The purpose of the First International Conference of Artificial Intelligence, Medical Engineering, Education (August 21–23, 2017, Moscow, Russia) is to present new thematic approaches, methods, and achievements of mathematicians, biologists, physicians, and technologists and also to attract additional interest of different specialists to this perspective theme. Its proceedings additionally include articles on specific tasks in various fields, where artificial intelligence systems can be applied in the future with great benefit.

The conference is organized jointly by Mechanical Engineering Research Institute of the Russian Academy of Sciences (IMASH RAN, <http://eng.imash.ru/>) and the “International Research Association of Modern Education and Computer Science” (RAMECS, <http://www.ramecs.org/part.html>). The organization of such

conference is one of the examples of growing Russian-Chinese cooperation in different fields of science and education.

The 32 contributions to the conference were selected by the programme committee for inclusion in this book out of all submissions.

Our sincere thanks and appreciation to the board members as listed below:

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Finally, we are grateful to Springer-Verlag and Janusz Kacprzyk as the editor responsible for the series “Advances in Intelligent System and Computing” for their great support in publishing these conference proceedings.

July 2017

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Advances in Artificial Systems for Medicine and
Education

Hu, Z.; Petoukhov, S.; He, M. (Eds.)

2018, XIII, 344 p. 128 illus., Softcover

ISBN: 978-3-319-67348-6