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Advanced Computational Intelligence Techniques for Virtual Reality in Healthcare

Springer

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Dr. Deepak Gupta *would like to dedicate this book to his father Sh. R. K. Gupta, his mother Smt. Geeta Gupta, his mentors Dr. Anil Kumar Ahlawat, Dr. Arun Sharma for their constant encouragement, his family members including his wife, brothers, sisters, kids, and to my students close to my heart.*

Prof. (Dr.) Aboul Ella Hassanien *would like to dedicate this book to his beloved wife Azza Hassan El-Saman.*

Dr. Ashish Khanna *would like to dedicate this book to his mentors Dr. A. K. Singh and Dr. Abhishek Swaroop for their constant encouragement and guidance and his family members including his mother, wife and kids. He would also like to dedicate this work to his (Late) father Sh. R. C. Khanna with folded hands for his constant blessings.*

Preface

We hereby are delighted to launch our book entitled *Advanced Computational Intelligence Techniques for Virtual Reality in Healthcare*. This volume is able to attract a diverse range of engineering practitioners, academicians, scholars, and industry delegates, with the reception of abstracts from different parts of the world. Around 25 full-length chapters have been received. Among these manuscripts, 11 chapters have been included in this volume. All the chapters submitted were peer-reviewed by at least two independent reviewers, who were provided with a detailed review proforma. The comments from the reviewers were communicated to the authors, who incorporated the suggestions in their revised manuscripts. The recommendations from two reviewers were taken into consideration while selecting chapters for inclusion in the volume. The exhaustiveness of the review process is evident, given a large number of articles received addressing a wide range of research areas. The stringent review process ensured that each published chapter met the rigorous academic and scientific standards.

We would also like to thank the authors of the published chapters for adhering to the time schedule and for incorporating the review comments. We wish to extend my heartfelt acknowledgment to the authors, peer reviewers, committee members, and production staff whose diligent work put shape to this volume. We especially want to thank our dedicated team of peer reviewers who volunteered for the arduous and tedious step of quality checking and critique on the submitted chapters.

Lastly, we would like to thank Springer for accepting our proposal for publishing the volume titled *Advanced Computational Intelligence Techniques for Virtual Reality in Healthcare*.

New Delhi, India — Deepak Gupta
Cairo, Egypt — Aboul Ella Hassanien
New Delhi, India — Ashish Khanna

About This Book

Advanced Computational Intelligence Techniques for Virtual Reality in Healthcare addresses the difficult task of integrating computational techniques with virtual reality and healthcare.

The book presents world of virtual reality in healthcare, cognitive and behavioral training, understand mathematical graphs, human–computer interaction, fluid dynamics in healthcare industries, accurate real-time simulation, healthcare diagnostics, and so on.

By presenting the computational techniques for virtual reality in healthcare, this book teaches readers to use virtual reality in healthcare industry, thus providing a useful reference for educational institutes, industry, researchers, scientists, engineers, and practitioners.

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About the Editors

Dr. Deepak Gupta is Eminent Academician and plays versatile roles and responsibilities juggling between lectures, research, publications, consultancy, community service, Ph.D., and postdoctorate supervision, etc. With 12 years of rich expertise in teaching and two years in industry, he focuses on rational and practical learning. He has contributed massive literature in the fields of human–computer interaction, intelligent data analysis, nature-inspired computing, machine learning, and soft computing. He has served as Editor-in-Chief, Guest Editor, and Associate Editor in SCI and various other reputed journals. He has completed his postdoc from Inatel, Brazil, and Ph.D. from Dr. APJ Abdul Kalam Technical University. He has authored/edited 35 books with national/international-level publishers (Elsevier, Springer, Wiley, Katson). He has published 87 scientific research publications in reputed international journals and conferences including 39 SCI Indexed Journals of IEEE, Elsevier, Springer, Wiley, and many more. He is the convener and organizer of "ICICC" Springer Conference Series.

Dr. Aboul Ella Hassanien is Founder and Head of the Egyptian Scientific Research Group (SRGE) and Professor of Information Technology at the Faculty of Computer and Information, Cairo University. He is Ex-Dean of the faculty of computers and information, Beni Suef University. He has more than 800 scientific research papers published in prestigious international journals and over 30 books covering such diverse topics as data mining, medical images, intelligent systems, social networks, and smart environment. He won several awards including the Best Researcher of the Youth Award of Astronomy and Geophysics of the National Research Institute, Academy of Scientific Research (Egypt, 1990). He was also granted a scientific excellence award in humanities from the University of Kuwait for the 2004 Award and received the superiority of scientific—University Award (Cairo University, 2013). Also, he honored in Egypt as the best researcher in Cairo University in 2013. He was also received the Islamic Educational, Scientific and Cultural Organization (ISESCO) Prize on Technology (2014) and received the State Award for Excellence in Engineering Sciences in 2015. He was awarded the medal of Sciences and Arts of the first class by the President of the Arab Republic of Egypt, 2017.

Dr. Ashish Khanna is a highly qualified individual with around 15 years of rich expertise in teaching, entrepreneurship, and research and development with specialization in Computer Science Engineering Subjects. He received his Ph.D. degree from National Institute of Technology, Kurukshetra. He has completed his M. Tech. in 2009 and B. Tech. from GGSIPU, Delhi, in 2004. He has published many research papers in reputed journals and conferences. He also has papers in SCI and Scopus Indexed Journals including some in Springer Journals. He is Co-author in 10 textbooks of various engineering courses. He is Guest Editor in many special issues of *IGI Global*, *Bentham Science, and Inderscience Journals*. He is convener and organizer in ICICC-2018 Springer conference. He is also a successful entrepreneur by originating a publishing house named as "Bhavya Books" having 250 solution books and around 50 textbooks. He has also started a research unit under the banner of "Universal Innovator".