Foreword

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Digital Anatomy

Applications of Virtual, Mixed and Augmented Reality

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Foreword by Nicholas Ayache

As both the patient data and medical practice become more and more digital, it is also the case for the anatomy discipline that undergoes a computational revolution.

This book presents all the aspects of this computational revolution; for instance, how to create dissections from 3D models which are useful for anatomical research and teaching, how to tailor those models to patient-specific anatomies from medical images, how to compute statistics based on digital anatomical models, how to introduce novel human–computer interfaces to perform digital dissection tasks, how Extended Reality opens new avenues for dissecting digital anatomical representations …

Not only this book presents methodological concepts and methods, but it also showcases practical tools and algorithms that are useful for physicians, anatomists, and computer scientists interested in digital anatomy: from students to researchers, from teachers to industry practitioners from various backgrounds including not only medicine and biology but also paleontology, history, arts, computer science, and applied mathematics.

Finally, this book will contribute to advance research in e-medicine as the Extended Reality applications, tools, methods, and algorithms presented in this book are relevant for computer-aided diagnosis, prognosis, and therapy that, in turn, heavily rely on a faithful digital representation of a patient's anatomy or, in other words, a patient's digital twin. Such advancements presented in this book will be paramount for the physicians and surgeons to improve their medical practice's quality and precision. Therefore, in the end, these advancements will contribute to the benefit of all the real patients in the world.

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