A modern guide to computational models and constructive simulation for personalized patient care using the Digital Patient

The healthcare industry’s emphasis is shifting from merely reacting to disease to preventing disease and promoting wellness. Addressing one of the more hopeful Big Data undertakings, *The Digital Patient: Advancing Healthcare, Research, and Education* presents a timely resource on the construction and deployment of the Digital Patient and its effects on healthcare, research, and education. The Digital Patient will not be constructed based solely on new information from all the “omics” fields; it also includes systems analysis, Big Data, and the various efforts to model the human physiome and represent it virtually. The Digital Patient will be realized through the purposeful collaboration of patients as well as scientific, clinical, and policy researchers.

*The Digital Patient: Advancing Healthcare, Research, and Education* addresses the international research efforts that are leading to the development of the Digital Patient, the wealth of ongoing research in systems biology and multiscale simulation, and the imminent applications within the domain of personalized healthcare. Chapter coverage includes:

- The visible human
- The physiological human
- The virtual human
- Research in systems biology
• Multi-scale modeling
• Personalized medicine
• Self-quantification
• Visualization
• Computational modeling
• Interdisciplinary collaboration

The Digital Patient: Advancing Healthcare, Research, and Education is a useful reference for simulation professionals such as clinicians, medical directors, managers, simulation technologists, faculty members, and educators involved in research and development in the life sciences, physical sciences, and engineering. The book is also an ideal supplement for graduate-level courses related to human modeling, simulation, and visualization.

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