

Table of Contents - *Digital Surgery*

Editor: Sam Atallah

Publisher: Springer Nature | Anticipated Publication - 2020

Chapter 1: The Cognitive Revolution (**Ozanan Meireles**)

Harvard University

Chapter 2: Artificial Intelligence for Next Generation Medical Robotics (**Mahir Ozmen, Asutay Ozmen, & Çetin Kaya Koç**)

UC Santa Barbara

Chapter 3: Cloud Surgery and Cloud Robotics (**Asa Atallah and Sam Atallah**)

Netflix, UCF College of Medicine

Chapter 4: 5G Networks, Robotics, and The Operating Theater (**Mischa Dohler**)

King's College, London

Chapter 5: Haptics and Vision Systems for Surgical Robots (**Mark Soliman and Marco Ferrara**)

AdventHealth, Orlando Regional Medical Center

Chapter 6: Digital and 3D Models for Surgical Planning (**Jordan Fletcher and Danilo Miskovic**)

St. Marks Hospital

Chapter 7: Realistic Organ Models for Simulation and Training (**Ahmed Ghazi**)

University of Rochester

Chapter 8: Augmented Reality for Surgery (**Manish Chand and Dan Stoyanov**)

The London Clinic, Touch Surgery

Chapter 9: Navigation and Image Guided Surgery (**A. Melani, A. Wijsmuller, L. Gustavo, J. Marescaux**)

IRCAD, France, IRCAD, Latin America

Chapter 10: Operating in The Near Infrared Spectrum (**Thomas Barnes**)

Oxford University

Chapter 11: Florescence Guided Surgery (**Walter Stummer**)

Neurosurgery, Universität Münster

Chapter 12: A Virtual Reality for The Digital Surgeon (**Jean Nehme**)

Touch Surgery

Chapter 13: Robotic Automation for Surgery (**Peter C.W. Kim**)

Institute of Pediatric Surgical Innovation

Chapter 14: 3D Printing Biologic Tissue: Applications for Surgery (**Nureddin Ashmmankhi, Tamer Mohamed**)

UCLA, Aspect Biosystems

Chapter 15: Augmented Reality for Interventional Procedures (**Atul Gupta**)

Philips Healthcare

Chapter 16: The Visible Patient (**Luc Soler**)

IRCAD, France

Chapter 17: Augmented Cognition in the Operating Room (**Richard Dias**)

Harvard Medical School

Chapter 18: Cooperative Robotics: Potential Applications in Surgery (**Dmitry Oleynikov**)

University of Nebraska

- Chapter 19: Mind Controlled Artificial Limbs and Sensors (**Richard Weir, Bill Bluethman, and William Kethman**)
Stanford University, NASA, and The University of Colorado
- Chapter 20: Non-Linear Surgical Robots (**Debby Keller, Eduardo Parra-Davila, and Sam Atallah**)
Columbia University, Good Samaritan Hospital, UCF College of Medicine
- Chapter 21: AI and Machine Learning: Implications for Surgery (**David Hindin**)
Stanford University
- Chapter 22: Translating AI for Surgery: Current Challenges and Future Perspectives (**Rachael Callcut**)
UCSF Center for Artificial Intelligence
- Chapter 23: AI and Endoscopy: Future Perspectives (**Michael F. Byrne**)
Univ. of British Columbia, Vancouver
- Chapter 24: Explainable AI for the Operating Theater (**Frank Rudzicz and Shalmali Joshi**)
Vector Institute of Artificial Intelligence
- Chapter 25: A Digital Doorway to Global Surgery (**Nadine Hachach-Haram**)
Proximie, Singularity University
- Chapter 26: Telementoring (**Justin W. Collins**)
Karolinska Institutet
- Chapter 27: Digital Medical School: New Paradigms for Tomorrow's Surgical Education (**Joanna Ashby et al.**)
Harvard Global Surgery
- Chapter 28: A Farewell to Theaters (**Joep Knol and Sami Chadi**)
Jessa Hospital, Univ. of Toronto
- Chapter 29: 3D Simulation and Modeling for Surgeon Education and Patient Engagement (**C. Kontovounisios, F. Bello, et al.**)
Imperial College of London
- Chapter 30: Next Generation Surgical Robots (**Erik Wilson**)
McGovern Medical School
- Chapter 31: Intelligent Surgery (**Darla Hutton**)
Intuitive Surgical
- Chapter 32: The Future of Surgery (**Prokar Dasgupta**)
King's College, London