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Heterogeneous Displays for Surgery and Surgical SimulationVisualization of Treatment Evolution Using Hardware-Accelerated Morphs; Real-time Rendering of Radially Distorted Virtual Scenes for Endoscopic Image Augmentation; Tracking the Domain: The Medical Modeling and Simulation Database; The ViCCU Project - Achieving Virtual Presence using Ultrabroadband Internet in a Critical Clinical Application - Initial Results; High Stakes Assessment Using Simulation - An Australian Experience; The Virtual Pediatric Standardized Patient Application: Formative Evaluation Findings
The Visible Human and Digital Anatomy Learning InitiativeLaparoscopic Task Recognition Using Hidden Markov Models; Intraoperative Augmented Reality: The Surgeons View; A Vision-Based Surgical Tool Tracking Approach for Untethered Surgery Simulation and Training; Haptic Simulation of the Milling Process in Temporal Bone Operations; Soft Tissue Deformation using a Nonlinear Hierarchical Finite Element Model with Real-Time Online Refinement; Modeling Biologic Soft Tissues for Haptic Feedback with an Hybrid Multiresolution Method Control of Laparoscopic Instrument Motion in an Inanimate Bench Model: Implications for the Training and Evaluation of Technical SkillsTearing of Membranes for Interactive Real-Time Surgical Training; Interactive Real-Time Simulation of an Endoscopic Polyp Removal; Surgical Robot Setup Simulation with Consistent Kinematics and Haptics for Abdominal Surgery; Development of a Navigation Function for an Endosocopic Robot Surgery System; Development of a 3D Visualization System for Surgical Field Deformation with Geometric Pattern Projection In Vivo Force During Arterial Interventional Radiology Needle Puncture Procedures

Sommario/riassunto

Robotics and intelligence networks allow the healer's sight, hearing, touch, and judgment to be extended across distance, as if by magic. The moments when scientific truth is suddenly revealed after lengthy observation, experimentation, and measurement is the real magic. This book documents these moments, which are human ingenuity in progress.