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Nota di contenuto	Title page; Preface; Conference Organization; Contents; Dynamic Generation of Surgery Specific Simulators - A Feasibility Study; Haptic Laparoscopic Skills Trainer with Practical User Evaluation Metrics; Desktop and Conference Room VR for Physicians; A Biologically Derived Approach to Tissue Modeling; Grid Enabled Remote Visualization of Medical Datasets; Surface Scanning Soft Tissues; Validation of a Bovine Rectal Palpation Simulator for Training Veterinary Students; Predictive Biosimulation and Virtual Patients in Pharmaceutical R&D; Simulating Surgical Incisions without Polygon Subdivision 3D Real-time FEM Based Guide Wire Simulator with Force FeedbackDetermining the Efficacy of an Immersive Trainer for Arthroscopy Skills; Teaching Intravenous Cannulation to Medical Students: Comparative Analysis of Two Simulators and Two Traditional Educational Approaches; Validation of SimPL - A Simulator for Diagnostic Peritoneal Lavage Training; Challenges in Presenting High Dimensional Data to aid in Triage in the DARPA Virtual Soldier Project;

A Web-based Remote Collaborative System for Visualization and Assessment of Semi-Automatic Diagnosis of Liver Cancer from CT Images

Heterogeneous Displays for Surgery and Surgical

Simulation Visualization 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 Initiative Laparoscopic

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

Skills Tearing 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

Endoscopic 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

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## 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.

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