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Collana	Theoretical Computer Science and General Issues, , 2512-2029 ; ; 5104
Disciplina	003.3
Soggetti	Computer simulation Computer vision Computer graphics Bioinformatics Medical informatics Radiology Computer Modelling Computer Vision Computer Graphics Computational and Systems Biology Health Informatics
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Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Finite Element Modelling -- Physically Based Finite Element Model of the Face -- On the Application of Model Reduction Techniques to Real-Time Simulation of Non-linear tissues -- Constitutive Modelling of Endothelium Denudation for Finite Element Simulation of Angioplasty -- Efficient Nonlinear FEM for Soft Tissue Modelling and Its GPU Implementation within the Open Source Framework SOFA -- Mass Spring and Statistical Shape Modelling -- Biquadratic and Quadratic Springs for Modeling St Venant Kirchhoff Materials -- Exploring Parallel Algorithms for Volumetric Mass-Spring-Damper Models in CUDA -- An Integrated Approach for Reconstructing a Surface Model of the Proximal Femur from Sparse Input Data and a Multi-Level Point Distribution

Model -- Coupling Deformable Models for Multi-object Segmentation -- Motion and Fluid Modelling -- Modelling Prostate Gland Motion for Image-Guided Interventions -- A Real-Time Predictive Simulation of Abdominal Organ Positions Induced by Free Breathing -- Effect of Friction and Material Compressibility on Deformable Modeling of Human Lung -- Simulating Mechanism of Brain Injury During Closed Head Impact -- Mechanism and Localization of Wall Failure During Abdominal Aortic Aneurysm Formation -- Implementation Issues -- Segmentation and 3D Reconstruction Approaches for the Design of Laparoscopic Augmented Reality Environments -- Deforming a High-Resolution Mesh in Real-Time by Mapping onto a Low-Resolution Physical Model -- Versatile Design of Changing Mesh Topologies for Surgery Simulation -- Contact Model for Haptic Medical Simulations -- Estimation of the Fracture Toughness of Soft Tissue from Needle Insertion -- Towards a Framework for Assessing Deformable Models in Medical Simulation -- Posters -- Image Guidance and Surgery Simulation Using Inverse Nonlinear Finite Element Methods -- Laparoscopic Tool Tracking Method for Augmented Reality Surgical Applications -- Coronary Motion Modelling for Augmented Reality Guidance of Endoscopic Coronary Artery Bypass -- Quantifying Effects of Class I Anti-arrhythmic Drugs in Human Virtual Cardiac Tissues -- Development of a Microscope Embedded Training System for Neurosurgery -- A Virtual Environment for Core Skills Training in Vascular Interventional Radiology -- Modelling Organ Deformation Using Mass-Springs and Tensional Integrity.

Sommario/riassunto

This book constitutes the refereed proceedings of the 4th International Symposium on Biomedical Simulation, ISBMS 2008, held in London, UK, in July 2008. The 19 revised full papers and 7 poster papers presented were carefully reviewed and selected from numerous submissions. The papers are organized in four different sections corresponding to key areas and techniques of this constantly expanding field: finite element modeling, mass spring and statistical shape modeling, motion and fluid modeling and implementation issues. An additional section covers the posters presented at the meeting.
