

1. Record Nr.	UNINA9910841853903321
Autore	Wang Guangzhi
Titolo	12th Asian-Pacific Conference on Medical and Biological Engineering : Proceedings of APCMBE 2023, May 18-21, 2023, Suzhou, China-- Volume 2: Computer-Aided Surgery, Biomechanics, Health Informatics, and Computational Biology
Pubbl/distr/stampa	Cham : , : Springer, , 2024 ©2024
ISBN	3-031-51485-8
Edizione	[1st ed.]
Descrizione fisica	1 online resource (439 pages)
Collana	IFMBE Proceedings Series ; ; v.104
Altri autori (Persone)	YaoDezhong GuZhongze PengYi TongShanbao LiuChengyu
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- APCMBE2023 Committees -- Preface -- Contents -- Computer-Aided Surgery -- Inside-Out Accurate Head Tracking with Head-Mounted Augmented Reality Device -- 1 Introduction -- 2 Methods -- 2.1 Retro-reflective Tool Definition and Detection -- 2.2 Camera Depth Undistortion -- 2.3 Preoperative Registration -- 2.4 Dynamic Head Tracking -- 3 Experiments and Results -- 3.1 Preoperative Registration -- 3.2 Tracking Stability -- 3.3 System Performance -- 4 Discussions -- 5 Conclusions -- References -- A Model-Guided Method for Ultrasound Probe Calibration -- 1 Introduction -- 2 Methods -- 2.1 Calibration Model Design and General Ideas -- 2.2 3D Reconstruction Based on an Uncalibrated Probe -- 2.3 Image Registration -- 2.4 Probe Calibration -- 3 Experiments and Results -- 4 Discussions and Conclusions -- References -- Real-Time Medical Tool Runout Monitor Based on Dual Laser Displacement Sensors -- 1 Introduction -- 2 Methods -- 2.1 Error Model -- 2.2 Dual Laser Displacement Sensors Tracking Structure and Calibration Method

-- 2.3 Cutting Tool Tip Position Measurement Method -- 3  
Experiments and Results -- 3.1 Experimental Setup -- 3.2 Stability  
and Precision -- 3.3 Use Case: Drilling -- 3.4 System Performance -- 4  
Discussions and Conclusions -- References -- Correction of Premature  
Closure of Sagittal Suture with Small-Incision Traction Bow -- 1  
Introduction -- 2 Materials and Methods -- 2.1 Patients -- 2.2 Surgical  
Method -- 2.3 Results -- 3 Discussion -- 4 Conclusions -- References  
-- A Home-Style Intelligent Monitoring Sanitize Robot -- 1  
Introduction -- 2 Home Monitoring Sanitize Overall Design of Robots  
-- 3 Home Monitoring Sanitize Control of Various Functions of Robots  
-- 3.1 Sanitize Mode Control -- 3.2 Intelligent Temperature Monitoring  
Mode Control -- 4 Monitoring Sanitize Robot Control Testing.  
4.1 Robot Temperature Detection Error Analysis -- 4.2 Robot Driving  
Stability Simulation -- 5 Conclusions -- References -- YOLOv7-Based  
Multiple Surgical Tool Localization and Detection in Laparoscopic  
Videos -- 1 Introduction -- 2 Methodology and Experiment -- 2.1  
YOLOv7 Algorithm -- 2.2 Data Pre-Processing -- 2.3 Training Process  
-- 2.4 Evaluation Metrics -- 2.5 Experiment Implement -- 3 Results --  
4 Discussion -- 5 Conclusion -- References -- A Frequency-Based  
Analysis Method to Improve Adversarial Robustness of Neural Networks  
for EEG-Based Brain-Computer Interfaces -- 1 Introduction -- 2  
Proposed Approach -- 2.1 Framework -- 2.2 EEG Adversarial Example  
Distribution and Influence -- 2.3 Frequency Analysis of EEG Adversarial  
Example -- 2.4 Variation Coefficient-Based EEG Adversarial Example  
Detection -- 3 Experiments and Results -- 3.1 Experimental Setup --  
3.2 Evaluating the Variation Coefficient -- 3.3 Detection Results of EEG  
Adversarial Examples -- 4 Conclusions -- References -- Robot-  
Assisted Optical Coherence Tomography for Automatic Wide-Field  
Scanning -- 1 Introduction -- 2 Methods -- 3 Experiments and Results  
-- 4 Discussion and Conclusion -- References -- Adversarial Detection  
and Defense for Medical Ultrasound Images: From a Frequency  
Perspective -- 1 Introduction -- 2 Ultrasound Adversarial Images  
Detection Method: From a Frequency Perspective -- 2.1 Overview --  
2.2 Feature Distribution of Adversarial Examples -- 2.3 Difference  
of Frequency Domain -- 2.4 Coefficient of Variation -- 3 Experiments  
and Results -- 3.1 Datasets and Implementation Details -- 3.2  
Adversarial Examples Detection on Ultrasound Images -- 4 Conclusion  
-- References -- A Novel Model-Independent Approach  
for Autonomous Retraction of Soft Tissue -- 1 Introduction -- 2  
Methods -- 2.1 State Representation Learning (SRL) Setup.  
2.2 Deep Reinforcement Learning (DRL) Setup -- 3 Results -- 3.1  
Sample Efficiency -- 3.2 Accomplishment Degree of the Task -- 3.3  
Safety Level Indicator of the Task -- 4 Discussion and Conclusion --  
References -- A Soft Robot Based on Magnetic-Pneumatic Hybrid  
Actuation for Complex Environments -- 1 Introduction -- 2 Design  
Concept and Fabrication -- 3 Motion Gait and Analysis -- 4 Experiment  
-- 5 Conclusion -- 6 Discussion -- References -- A VR Environment  
for Cervical Tumor Segmentation Through Three-Dimensional Spatial  
Interaction -- 1 Introduction -- 2 Methods -- 2.1 Overview of Our  
Environment -- 2.2 Visualization Platform of Cervical Imaging -- 2.3  
3D Spatial Interaction and 3D Tumor Segmentation -- 3 Results  
and Discussion -- 3.1 System Architecture and Technical Details -- 3.2  
User Study -- 3.3 Discussion -- 4 Conclusion -- References --  
An Image Fusion Method Combining the Advantages of Dual-Mode  
Optical Imaging in Endoscopy -- 1 Introduction -- 2 Methods -- 3  
Experiments and Results -- 4 Discussion -- 5 Conclusions --  
References -- An End-to-End Spatial-Temporal Transformer Model  
for Surgical Action Triplet Recognition -- 1 Introduction -- 2 Methods

-- 2.1 End-to-End Spatial-Temporal Transformer -- 2.2 Multi-task Auxiliary Supervisions -- 3 Experiments -- 3.1 Dataset Description -- 3.2 Evaluation Metrics -- 3.3 Implementation Details -- 4 Results -- 4.1 Ablation Studies -- 4.2 Comparisons with State-of-the-Arts -- 5 Conclusions -- References -- 2D/3D Reconstruction of Patient-Specific Surface Models and Uncertainty Estimation via Posterior Shape Models -- 1 Introduction -- 2 Method -- 2.1 Overview of the Present Method -- 2.2 Construction of the Posterior Shape Model -- 2.3 Surface Model Reconstruction and Uncertainty Estimation via the Posterior Shape Model -- 3 Experiments and Results -- 3.1 Experimental Setup -- 3.2 Metrics. 3.3 Evaluation on the Synthetic Cases -- 3.4 Evaluation on the Cadaveric Cases -- 4 Conclusion -- References -- Semantics-Preserved Domain Adaptation with Target Diverse Perturbation and Test Ensembling for Image Segmentation -- 1 Introduction -- 2 Methods -- 2.1 Preliminary -- 2.2 Image Translation -- 2.3 Semantics Preservation Regularization (SPR) -- 2.4 Target Diverse Perturbation (TDP) -- 2.5 Test-Time Ensembling (TTE) for CDIS -- 3 Experiments -- 3.1 Dataset and Preprocessing -- 3.2 Comparison and Ablation -- 3.3 Evaluation and Implementation -- 4 Results -- 4.1 Comparison Performance -- 4.2 Ablation Studies -- 5 Conclusion -- References -- Biomechanics -- A New Mathematical Model for Assessment of Bleeding and Thrombotic Risk in Three Different Types of Clinical Ventricular Assist Devices -- 1 Introduction -- 2 Materials and Methods -- 2.1 Studied Models -- 2.2 Hydraulic Performance Prediction -- 2.3 Shear Stress and Residence Time Prediction -- 2.4 Bleeding and Thrombosis Prediction Model Building -- 2.5 Mesh Details and Sensitivity Analysis -- 2.6 CFD Methods -- 3 Results -- 3.1 Hydraulic Performances and Flow Field -- 3.2 Shear Stress and Residence Time -- 3.3 Bleeding Probability -- 3.4 Thrombotic Potential -- 4 Discussion -- 5 Conclusions -- References -- Analysis of YAP1 Gene as a Potential Immune-Related Biomarker and Its Relationship with the TAZ Expression -- 1 Introduction -- 2 Materials and Methods -- 2.1 UCSC Xena Dataset Analysis -- 2.2 GEO Dataset Acquisition and Analysis -- 2.3 cBioPortal Dataset Analysis -- 2.4 UALCAN Dataset Analysis -- 2.5 Kaplan-Meier Plotter Analysis -- 2.6 TISIDB Immune Analysis -- 2.7 CIBERSORT Immune Analysis -- 2.8 GSEA Analysis -- 2.9 TIMER Database Analysis -- 2.10 STRING Protein Network Analysis -- 2.11 CYTOSCAPE Network Analysis -- 2.12 GENPIA Dataset Analysis -- 2.13 Statistical Analysis. 3 Results -- 3.1 Pan-Cancer Analysis of YAP1 Expression, Stage, Molecular Subtypes, and Methylated Level in Human Cancers -- 3.2 Genetic Alterations in YAP1 in Human Cancers -- 3.3 Prognostic Value of YAP1 Expression in Cancers -- 3.4 Correlation Between YAP1 Expression and Immune Cells Infiltration and Immune Subtypes in Human Cancers -- 3.5 Significant Pathways Influenced by YAP1 in Different Cancers -- 3.6 The Correlation Between YAP1 Expression and TAZ Expression and Regulate Downstream Genes -- 4 Discussion -- 5 Conclusions -- References -- Morphological Feature Recognition of Induced ADSCs Based on Deep Learning -- 1 Introduction -- 2 Materials and Methods -- 3 Results -- 4 Discussion -- 5 Conclusions -- References -- Micromechanical Properties Investigation of Rabbit Carotid Aneurysms by Atomic Force Microscopy -- 1 Introduction -- 2 Materials and Methods -- 2.1 Carotid Aneurysm Creation -- 2.2 Histological Examination -- 2.3 AFM Experiment -- 2.4 Finite-element Method Simulation -- 3 Results -- 3.1 Histology -- 3.2 Comparison Between Aneurysm Arteries and Healthy Arteries -- 3.3 Comparison of Indentation at Different Depths by FEM -- 4 Discussion -- 5 Conclusions -- References -- The Development of the "Lab-In-Shoe"

System Based on an Instrumented Footwear for High-Throughput Analysis of Gait Parameters -- 1 Introduction -- 2 Materials and Methods -- 2.1 "Lab-in-shoe" Design -- 2.2 Implementation of the Algorithm -- 2.3 Experimental Validations -- 3 Results -- 3.1 Validity of the System -- 3.2 Measurement Reliability Analysis -- 4 Discussion -- 5 Conclusions -- References -- 3D-Printed Insole Designs for Enhanced Pressure-Relief in Diabetic Foot Based on Functionally-Graded Stiffness Properties -- 1 Introduction -- 2 Materials and Methods -- 2.1 3D Geometry of the Diabetic Foot Insoles -- 2.2 Functionally-Graded Stiffness Design. 2.3 Patient-Specific Plantar Pressure Analysis.

---