Deadline for abstract/paper submission: 10th January 2020

1ST ANNOUNCEMENT

COMPUTER ASSISTED RADIOLOGY AND SURGERY

34st International Congress and Exhibition

CARS 2020

June 23–27, 2020

Munich, Germany

Main Themes

- Medical Imaging
- Computed Maxillofacial Imaging
- Image Processing and Visualization
- Multidisciplinary Computational Anatomy
- E-Health and IHE
- Computer Aided Diagnosis
- Computer Assisted Radiation Therapy
- Image and Model Guided Therapy
- Personalized Medicine
- Surgical Navigation
- Surgical Robotics and Instrumentation
- Surgical Simulation and Education
- Computer Assisted Orthopaedic and Spinal Surgery
- Computer Assisted Head and Neck, and ENT Surgery
- Image Guided Neurosurgery
- Minimally Invasive Cardiovascular and Thoracoabdominal Surgery
- Information Processing in Computer-Assisted Intervention
- Digital Operating Room
- Human-Machine Interface
- Pathology Informatics
- Machine Intelligence
- Integrated Patient Care
- Tumor Boards
- Innovative Clinical Investigations

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34th International Congress and Exhibition on Computer Assisted Radiology (CAR)

Chair: Ulrich Bick, MD (DE)

- Medical Imaging, e.g.
  DR, CT, MR, Virtual Endoscopy, US, SPECT, PET and Molecular Imaging
- Computer Assisted Cardiovascular Imaging
- Image Processing and Display
- Quantitative Imaging Biomarkers
- Medical Workstations
- Interventional Radiology
- Minimally Invasive Spinal Therapy
- Image Guided Diagnosis and Therapy of the Prostate
- Ablation Therapies
- Image Guided Radiation Therapy
- Nanotechnology for Imaging and Therapy
- Telemedicine, E-health and Multimedia EPR
- Expert Systems and Computer Assisted Education
- Economic and Management Issues
- Security, Legal and Ethical Aspects
- PACS Architecture, Workstation Design and Workflow
- Image Distribution, Storage and Archiving Strategies
- Interoperability and Standardization
- Managing Radiation Dose and Contrast Media
- Clinical Decision Support Systems

24th Annual Conference of the International Society for Computer Aided Surgery

President: Kensaku Mori, PhD (JP)

- Augmented Reality, Virtual Reality for Surgery and Interventions
- Image Processing and Visualization
- Intraoperative Devices and Sensors
- Intraoperative Imaging
- Computer-assisted Planning
- Surgical Navigation
- Navigated Control
- Surgical Robotics and Instrumentation
- 3D Modelling and Rapid Prototyping
- Validation, Verification and Evaluation of CAS Systems
- Postoperative Result Assessment
- Surgical Knowledge and Decision Management
- Decision and Action Support in Surgical Management
- Situation Awareness in the OR
- Surgical Skill Assessment
- Surgical Workflow Analysis
- Surgical Simulation, Education and Training
- Ergonomics, User Interfaces, Haptics and Multimodal Devices in Surgical Applications
- Brain-Computer Interface, Neurostimulation
- Artificial Intelligence and Machine / Deep Learning in Surgery
- Clinical specialties:
  Computer aided surgery in neurosurgery, ENT surgery, orthopaedic and spinal surgery, cardiovascular surgery, thoracic surgery, gastroenterological surgery, gynaecological surgery, urological surgery
- Image Guided Navigation Surgery
- Minimally Invasive Robotic Surgery
- Image Guided Therapy

22nd International Workshop on Computer-Aided Diagnosis and Artificial Intelligence

Chairman: Hiroyuki Yoshida, PhD (US)

- Deep Learning / Machine Learning
- Radiomics
- CAD for Precision Medicine
- 3D Printing
- Grand Challenges in CAD
- Quantitative Imaging
- Risk Assessment
- Decision Support Systems
- Comparative Evaluation and Fusing CAD systems
- Content-based Image Retrieval
- Observer Performance Studies
- Clinical Evaluation
- Cloud CAD
- CAD for Breast, Lung, Colon and Gastrointestinal Tract, Eye/Retina, Head and Neck, Liver, Prostate, Musculoskeletal, (Cardio-)Vascular, Multiple Organ Systems, and Dentistry
- CAD for Oncology
- CAD for Histopathology and Microscopy

26th Computed Maxillofacial Imaging Congress

Chairman: Christos Angelopoulos, PhD (US)
Co-chair: Yoshihiko Hayakawa, PhD (JP)

- New Imaging Devices and Novel Applications
- Evidence-based Selection Criteria in Digital Maxillofacial Imaging
- Craniomaxillofacial Computer-Aided Diagnosis
- Maxillofacial Image Processing
- Cranial and Maxillofacial Image Guided Surgery
- Image Navigated Dental Implantology
- Orthodontic and Endodontic Applications of Computed Imaging
- Imaging and Modelling for Maxillofacial Prosthodontics
- Cone Beam and Multislice CT
- Maxillofacial MRI and Ultrasound Imaging
- Image Fusion and Subtraction
- 3D and 4D Imaging
- Multi-dimensional Maxillofacial Modelling
- Virtual Reality and Dental Robotics
- Interoperability and Maxillofacial Applications in IHE

11th Conference on Information Processing in Computer-Assisted Intervention (IPCAI)

Chairs: Kensaku Mori, PhD (JP), Parvin Mousavi, PhD (CA), Lena Maier-Hein, PhD (DE)

- Surgical Data Science
- Interventional Imaging
- Systems and Software
- Evaluation and Validation
- Tracking and Navigation
- Interventional Robotics
- Surgical Planning and Simulation
- Advanced Intra-operative Visualization and User Interfaces
- Augmented Reality for Medical Applications
- Surgical Skill Analysis and Workflow

22nd IFCARS / SPIE / ISCAS Joint Workshop on the Digital Operating Room

Chairmen: Yoshihiro Muragaki, MD (JP), Heinz U. Lemke, PhD (DE)

- Surgical Workflow
- Intelligent Operating Room
- Therapy Imaging and Model Management Systems
- Surgical PACS
- DICOM and IHE in Surgery
- Management and Assessment of OR Systems Integration
- Architectures of ORs and Imaging Suites

2nd Machine Intelligence and CARS

Chairmen: Heinz U. Lemke, PhD (DE), Leonard Berliner, MD (US), Hubertus Feussner, MD (DE)

- Radiological Workflows and Machine Intelligence Methods and Tools
- Surgical Workflows and Machine Intelligence Methods and Tools
- Intelligent Agents
- Applications in Radiology and Surgery

5th ISCAS / CAD / IFCARS Joint Symposium on Multidisciplinary Computational Anatomy

Chairmen: Makoto Hashizume, MD (JP), Hiroyuki Yoshida, PhD (US), Heinz U. Lemke, PhD (DE)

- Micro-computational Anatomy
- Physiological Modeling in Multi-computational Anatomy
- Surgery Using Multi-computational Anatomy
- Mathematical Foundation of Multi-disciplinary Computational Anatomy
- Robotics and Multi-disciplinary Computational Anatomy
- Multi-disciplinary Computational Anatomy Assisting Radiology

13th CARS Clinical Day

Chairmen: Leonard Berliner, MD (US), Eric vanSonnenberg, MD (US), Hubertus Feussner, MD (DE)

- Clinical Innovations in Imaging and Interventional Radiology
- Clinical Innovations in Surgery
- The Future: Impact of Engineering/Informatics in Radiology and Surgery
- Computer Assisted Radiology and Minimally Invasive Therapy
- Results of Innovative Clinical Investigations

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