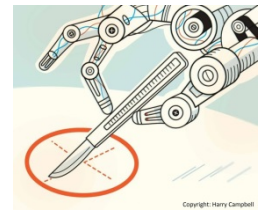


6TH SURGETICA



Le Couvent des Jacobins, Rennes, France, June 17-18, 2019

Program

Conference chairs: Pascal Haigron, Antoine Simon, Pierre Jannin (FR)

Monday, June 17, 2019

08:00 Registration

08:30 Opening Session

Jocelyne Troccaz, Pascal Haigron (FR)

08:40 Modeling and simulation

Session chair: Nabil Zemiti (FR)

Modeling the non-linearities of flexible endoscopes using machine learning

R. Aleluia Porto, F. Nageotte, M. De Mathelin; University of Strasbourg (FR)

Kernel selection in statistical femur modeling

A. Asvadi, G. Dardenne, A. Guezou-Philippe, A. Salhi, B. Borotikar, J. Troccaz, V. Burdin; Univ of Western Brittany, IMT Atlantique, University Grenoble Alpes (FR)

Pre-operative planning in acetabular and pelvic ring surgery: the first biomechanical model

M. Boudissa, M. Chabanas, H. Oliveri, G. Bahl, J Tonetti; Grenoble University Hospitals, University Grenoble Alpes (FR)

Biomechanical modeling of the lung deflation during minimally-invasive surgery

A. C. Lesage, K. Brock, D. Rice, B. Rigaud, A. Tam, G. Cazoulat; The University of Texas MD Anderson Cancer Center (USA)

10:00 Coffee break

10:30 Keynote lecture

Chair: Jocelyne Troccaz (FR)

Image guided surgery - inside and outside the OR

Ingerid Reinertsen; SINTEF Digital, Dpt. of Health Research (NO)

11:30 Medical procedures: analysis and evaluation

Session chair: Guillaume Dardenne (FR)

Situation awareness in the "Virtual Operating Room of Errors": a pilot study

M-S. Bracq, M. Le Duff, E. Michinov, B. Arnaldi, V. Gouranton, P. Jannin; Univ Rennes, CHU de Rennes (FR)

Preliminary evaluation of haptic guidance for pre-positioning a comanipulated needle

H. Gurnel, M. Marchal, L. Launay, L. Beuzit, A. Krupa; University of Rennes 1 (FR)

Analyzing the practice of expert surgeons based on video spatial features

A. Derathé, S. Voros, F. Reche, P. Jannin, A. Moreau-Gaudry, B. Gibaud; University Grenoble Alpes, CHU de Grenoble, University of Rennes 1 (FR)

12:30 Lunch

13:30 Data fusion and augmented reality

Session chair: Matthieu Chabanas (FR)

Intraoperative Ultrasound-based Augmented Reality Guidance

J. Shen, N. Zemiti, C. Taoum, J-L. Dillenseger, P. Rouanet, P. Poignet; University of Rennes 1, University of Montpellier, Institut du Cancer de Montpellier Val d'Aurelle (FR)

3D landmark detection for augmented reality based otologic procedures

R. Hussain, C. Guigou, K. Berihu Girum, A. Lalande, A. Bozorg Grayeli; University of Bourgogne Franche-Comté (FR)

Fusion of X-Ray and patient specific model to assist cardiac resynchronisation therapy

N. Courtial, A. Simon, S. Bruge, M. Lederlin, E. Donal, C. Leclercq, M. Garreau; University of Rennes 1, University Hospital Rennes (FR)

14:30 Keynote lecture

Chair: Jérôme Szewczyk (FR)

Driving and controlling flexible surgical instruments – new developments and challenges

Emmanuel Vander Poorten; KU Leuven (BE)

15:30 Coffee break & Poster session

16:00 Poster session

17:10 Robotics and mechatronics

Session chair: Pierre Renaud (FR)

X-ray free breach detection in robot-assisted spine surgery with real-time conductivity sensing

J. Da Silva, F. Richer, V. Kespern, T. Chandanson, G. Morel; SpineGuard, Sorbonne Université (FR)

Toward a design method for tensegrity-based medical robots

J. Begey, M. Vadrines, N. Andreff, P. Renaud; ICube, University of Strasbourg, University of Franche-Comté (FR)

Bright pill: ingestible biorobot using light to control therapeutic molecule release produced by embarked bacteria

T. Soranzo, G. Aiche, C. Caffaratti, D. Martin, P. Cinquin, Y. Haddab; University Grenoble Alpes, University of Montpellier (FR)

18:10 Surgetica Welcome Reception

20:00 Surgetica Dinner

Tuesday, June 18, 2019

08:30 Image processing and registration

Session chair: Jean Louis Dillenseger (FR)

Robust tracking of tissues for flexible endoscopy

X. T. Ha, P. Zanne, F. Nageotte; University of Strasbourg (FR)

Investigating the Role of Helical Markers in 3D Catheter Shape Monitoring from 2D Fluoroscopy

A. E-T. Yang, J. Szewczyk; Sorbonne Université (FR)

Localization of brachytherapy seeds in TRUS images using rigid priors and medial forces

V. Jaouen, J. Bert, A. Valeri, D. Visvikis; Inserm, Université de Bretagne Occidentale, CHRU Brest (FR)

Automatic segmentation of intraoperative ultrasound images of the brain using U-Net

F.-X. Carton, J. Noble, B. Munkvold, I. Reinertsen, M. Chabanas; Univ Grenoble Alpes, Vanderbilt Univ, Norwegian Univ of Science and Technology, SINTEF (FR-NO)

10:00 Coffee break

10:30 Invited lecture

Chair: Jean-Philippe Verhoye (FR)

Data-driven solutions for deep brain stimulation surgery

Clément Baumgarten; University Hospital Grenoble; University of Rennes 1, University Hospital Rennes, LTSI – INSERM UMR 1099 (FR)

11:10 Navigation and interventional planning

Session chair: Marie-Aude Vitrani (FR)

Real-time Prediction of High-risk Instrument Motion based on Location Information

Y. Sawano, N. Ohtori, Ryoichi Nakamura; Chiba University, Jikei University School of Medicine, Japan Science and Technology Agency (JP)

Transcranial robot-assisted Blood-Brain Barrier opening with Focused Ultrasound

G. Thomas, L. Barbé, P. Agou, B. Larrat, J. Vappou, F. Nageotte; Université de Strasbourg (FR)

Accurate Instrument Tracking in Minimally Invasive Surgery

M. Arico, G. Morel; Sorbonne Université (FR)

12:10 Closing session

12:30 Lunch

Poster session (Monday, June 17, 15:30)

Statistical shape model of vascular structures with abdominal aortic aneurysm

C. Dupont, C. Boichon-Grivot, A. Kaladji, A. Lucas, M. Rochette, P. Haigron; University of Rennes 1, Ansys France (FR)

Pelvic parameters measurement with sterEOS: a preliminary reliability study

M. Dorniol, G. Dardenne, A. Guezou-Philippe, H. Letissier, C. Lefevre, E. Stindel; University Hospital Brest, University of Western Brittany (FR)

Extended field-of-view of the knee bone surface using ultrasound

M. Nasan, Y. Morvan, G. Dardenne, J. Chaoui, E. Stindel; University of Western Brittany, University Hospital Brest, IMASCAP (FR)

Towards a patient-specific simulation of the balloon angioplasty treatment technique

B. Al-Helou, C. Dupont, A. Bel-Brunon, W. Ye, A. Kaladji, P. Haigron; University of Rennes 1, University Lyon, ANSYS (FR)

Nervous System Exploration Using Tractography To Enhance Pelvic Surgery

C. Muller, A. Delmonte, P. Meignan, Q. Peyrot, A. Virzi, L. Berteloot, D. Grevent, T. Blanc, P. Gori, N. Boddaert, I. Bloch, S. Sarnacki; Université Paris Descartes, Necker Hospital, Université Paris-Saclay (FR)

Transvaginal Uterine Biopsy: Robot Comanipulation

N. Tajeddine, M-A. Vitrani, R. Chalard; Sorbonne Université, Univ Paris 06 (FR)

Surface imaging for patient positioning in radiotherapy

S. Nazir, J. Bert, D. Visvikis, Hadi Fayad; University of Western Brittany, Hamad Medical Corporation OHS, PET/CT center Doha (FR-QA)

Orientability evaluation of concentric tube robots deployed in natural orifices

Q. Peyron, K. Rabenorosoa, N. Andreff, P. Renaud; University of Strasbourg, University of Franche-Comté (FR)

Computer Assisted Early Diabetic Retinopathy Detection from Retinal Fundus Image using Transfer Learning Model

B. Kumar, S. Kumar, Rajeev Gupta; MNNIT Allahabd (IN)

Simulation for preoperative planning, balloon inflation for tibial plateau fracture reduction

K. Aubert, T. Vendevre, M. Rochette, P. Rigoard, A. Germaneau; Université de Poitiers, ANSYS France, CHU Poitiers (FR)

Computer Assisted Detection of Good View Frame from USG Video for ONSD Measurement

B. Kumar, M. Singh, R. Gupta; MNNIT Allahabd (IN)

Patient's specific computer simulations to assist coronary artery bypass surgery

A. Drochon, A. Anselmi, H. Corbineau, J-P. Verhoye; Univ Technologie Compiègne, University Hospital Rennes (FR)

CFD based study of blood stagnation caused by LVAD inflow cannula angulation

A. Ben Abid, V. Morgenthaler, P. Haigron, E. Flecher; University of Rennes 1, University Hospital Rennes, ANSYS France (FR)

Transesophageal HIFU cardiac fibrillation therapy guidance by two perpendicular US images

B. Dahman, J.-L. Dillenseger; University of Rennes 1 (FR)

Potential of global vision system for learning laparoscopy surgical skills

S. Vijayan, E. Keddiseh, B. Trilling, S. Voros; University Grenoble Alpes (FR)

Segmenting Surgical Tasks using Temporal Convolutional Neural Network

M. Millan, J. Szewczyk, C. Achard; Sorbonne Université (FR)

An Experimental Protocol on Attentional Abilities in Classic and Robot-Assisted Laparoscopy

E. Ferrier-Barbut, V. Luengo, M-A. Vitrani; Sorbonne Université (FR)

Mixed Reality Experiment for Hemodialysis Treatment

C. Lohou, M. Bouiller, Emilie Gadea-Deschamps; Université Clermont Auvergne, Centre Hospitalier Emile Roux, le Puy-en-Velay (FR)

Image-based registration for lung nodule localization during VATS

P. Alvarez, R. Simon, M. Chabanas, Y. Payan, J.-L. Dillenseger; University of Rennes 1, University Grenoble Alpes, University Hospital Rennes (FR)

Additive Manufacturing of a Microbiota Sampling Capsule Based on a Bistable Mechanism

M. Ben Salem, G. Aiche, L. Rubbert, T. Soranzo, P. Cinquin, D. K. Martin, P. Renaud, Y. Haddab; University of Montpellier, University of Strasbourg, University of Grenoble Alpes (FR)

Towards a novel man-machine interface to speed up training on robot-assisted surgery

G. Gil, J. Walker, N. Zemiti, A. Okamura, P. Poignet; University of Montpellier, Stanford University (FR-USA)

Percutaneous osteoplasty

J. Garnon, L. Meylheux, B. Bayle, A. Gangi; University of Strasbourg (FR)

Development of a finite element model of prostate validated by a realistic prostate phantom

M. Dieng, G. Chagnon, S. Voros; University Grenoble Alpes (FR)

FEM-based confidence assessment of non-rigid registration

P. Baksic, H. Courtecuisse, M. Chabanas, B. Bayle; University of Strasbourg, University Grenoble Alpes (FR)

Tumor heterogeneity estimation from DW-MRI and histology data by linking macro- and micro-information in a quantitative way

Y. Yin, O. Sedlacek, K. Breuhahn, I. Vignon-Clementel, D. Drasdo; INRIA Paris, University Hospital of Heidelberg (FR-GE)

Improved prostate cancer radiotherapy planning with decreased dose in a rectal sub-region highly predictive for toxicity

O. Acosta, C. Lafond, A. Barateau, B. Houede, A. Largent, E. Mylona, N. Perichon, N. Delaby, P. Haigron, R. de Crevoisier; University of Rennes 1 (FR)

Experimental test bench for the hemodynamic study of coronary arteries: bifurcation, stent, aneurysm

M. Lagache, R. Coppel, A. Gomez, G. Finet, J. Ohayon; University Grenoble Alpes, Université Savoie Mont Blanc, Université Claude Bernard, Lyon (FR)