FREE FOOD & BEVERAGES

MEDVIZ FROM VISION TO DECISION

SEMINAR FRIDAY 16.12.2016

MedViz Incubator, Møllendalsbakken 7, 5th floor, 12:00-14:00

Joint Christmas Seminar for Visual Computing Forum and MedViz

Rector Dag Rune Olsen: Networking in Science

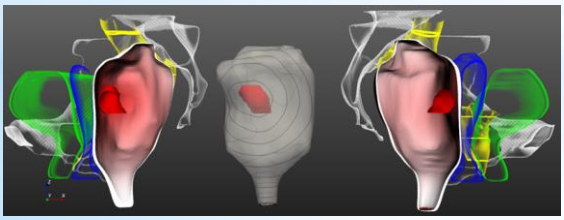
Helwig Hauser, Noeska Smit & Veronika Šoltészová: Model-supported data visualization to improve the diagnosis process

Speakers:
Prof. Helwig Hauser (UiB)
Dr. Noeska Smit (UiB)
Dr. Veronika Solteszova (UiB/CMR)

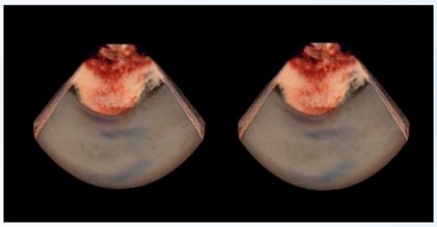
Introduction

We witness the advent of computational medicine and in the age of information big bang, new ways of thinking about medicine are required. P4 medicine is a key concept and is aiming at predictive, preventive, personalized and participatory practices. Significant progress in medicine comes from the principle of convergence in science, that is of disciplines such as natural sciences, technology. Here, visualization is the key in efficiently processing information in today's information inondation.

We have engaged in the investigation of major current challenges in visualization research with a particular focus on future medicine, especially computational medicine and we identified a larger number of pressing needs and analyzed. Among those are topics such as population imaging, simulation-driven therapy, quantitative therapy, visualization of physiology model-based visualization and dynamical medical imaging. In this talk, we will present our research on two of the mentioned research directions.



An unfolded view of a patient-specific model of the pelvis reveals the location and distance of the tumor (shown in red) to the surrounding organ border.



Snapshot of a 4D gallbladder ultrasound dataset that demonstrates output sensitve filtering. For this visualization, only 33% of voxels were selected to be filtered (right), as compared to filtering all voxels (left). Including overhead, 92% of processing time was necessary to render the visualization on the right.