Distinguished Seminar in Robotics, Systems & Control

The Institute of Robotics and Intelligent Systems presents:

Reinventing Bone Surgery: From Planning to Execution of a Hard-Tissue Cut

Date: February 23, 2018
Time: 15.15
Place: HG G3

Abstract:
Cutting bones is one of the oldest medical procedure performed to human patients. Thanks to the high mineral content of bone we have archaeological evidence of skull trepanation dating back more than 10’000 years. Despite the rapid development of surgical instruments over the last 200 years, the fundamental mechanism of bone cutting has not changed ever since. In this talk I will show you how researchers of the flagship project MIRACLE (Minimally Invasive Robot-Assisted Computer-guided Laser osteotomyE) are working on laser technology to reinvent bone surgery. The MIRACLE Project not only reinvents the way hard-tissues are being cut but also works on novel concepts to plan and visualise these surgical interventions in Virtual Reality and Augmented Reality environments.

Biography:
Philippe Cattin was born in Switzerland in 1967. He received his B.Sc. degree from the University of Applied Science in Brugg /Windisch in 1991. In 1995 he received the M.Sc. degree in computer science and in 2003 the Ph.D. degree in robotics from ETH Zurich, Switzerland. From 2003 to 2007 he was a Post-doctoral Fellow with the Computer Vision Laboratory at ETH Zurich. In 2007 he became an Assistant Professor at the University of Basel and was promoted to Associate Professor in 2015. He is the founder of the Center for medical Image Analysis and Navigation (CIAN) group at the Medical Faculty of the University of Basel. He is currently heading the recently founded Department of Biomedical Engineering at the University of Basel. Last year, Philippe was a Research Fellow at Brigham and Women´s Hospital in Boston/MA.

His research interests include medical image analysis, image-guided therapy, robotics-guided laser osteotomy and virtual reality. As a Principal Investigator he has finished many projects in these areas and published over 100 papers, patents and book chapters. He is also the founder of two spin-off companies and licensed his patents and software to medtech companies.