

# SOFA: an Open Source framework for Interactive (Medical) Simulations

**Stephane Cotin (INRIA)**

November 3 (Tuesday) 3:30 ~ 5:30 PM

KAIST-ICC Rm# L701



The variety and complexity of Medicine, as well as its ethical importance in today's society, have been a strong motivation in many scientific and technical disciplines. The medical field has already been a domain of application for computer science and several tools, such as image processing, are now an integral part of modern medicine. Yet, there is no question that the integration of new technologies in Medicine will continue to rise in the future. In this context, the simulation of medical procedures, whether it is targeted at education, training, or planning of interventions, will be a major element of the Medicine of the twenty-first century. To reach this objective it is key to strengthen research activities in the field of Medical Simulation, and to foster collaborations. The goal of the SOFA framework is to help develop newer algorithms, and share them with the scientific community, thus creating an efficient Open Source prototyping tool. In this talk I will present the main concepts of the SOFA framework, and illustrate its current potential through a variety of applications.

Dr. Stephane Cotin is currently a Research Director at INRIA, then French national research institute in Computer Science. His principal research activities are directly related to the simulation of medical procedures, for training and planning purposes. This involves various aspects such as biomechanical modeling of soft tissue, mechanical modeling of flexible medical devices such as stents, catheters and guide-wires. Other research interests include contact modeling between deformable structures, performance metrics for training systems, and patient-specific anatomical modeling adapted to real-time simulation. He is also responsible for the development of a national initiative on Medical Simulation using the SOFA framework ([www.sofa-framework.org](http://www.sofa-framework.org)) as a common platform for research, integration and validation of new algorithms. Before joining INRIA, He was Research Lead for the Sim Group at CIMIT in Cambridge, USA (from 1998 to 2007) and instructor at Harvard Medical School during the same period. Dr. Stephane Cotin is on the board of several scientific international meetings, he is a member of the Society for Medical Simulation, and author or co-author of more than 50 conference or journal articles.