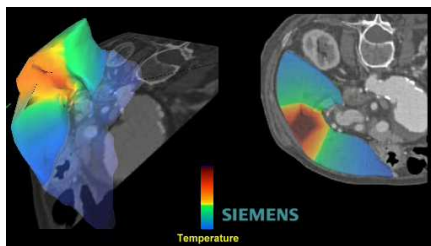
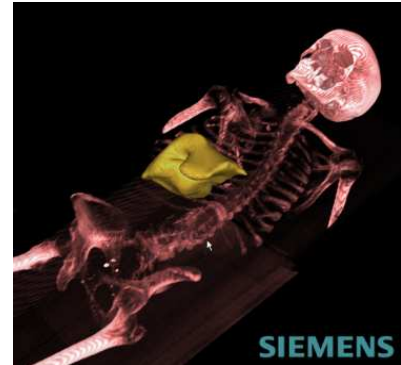


Ph.d. at INRIA Sophia-Antipolis and SIEMENS Corporate Research on “Computational Modeling of Radiofrequency Ablation for the Planning and Guidance of Abdominal Tumor Treatment”

PhD Topic : The overall goal of the Ph.D. is to provide the clinician with predictive methods for patient-specific planning and guidance of radiofrequency ablation (RFA) procedure. The outcome of RFA treatment for abdominal tumors is challenged by lack of patient specific planning. In particular, the presence of blood vessels and time-varying thermal diffusivity makes the prediction of the extent of ablated tissue difficult. This results in possible incomplete treatments and increased risks of recurrence and may compromise the overall outcome.



During this Ph.D., the candidate will investigate detailed computational models of the biological mechanisms involved in radiofrequency ablation of abdominal tumors, such as heat diffusion and cellular necrosis, to predict the extent of ablated tissue given probe locations and some biological parameters. Following a thorough validation of the proposed model, inverse problem algorithms will be investigated to automatically estimate the optimal locations of the probe and the electrical power to deliver in order to achieve a proper tumor ablation and treatment.

Location : The Ph.D. will be carried out between Asclepios research group, INRIA Sophia Antipolis, France and the Image Analytics and Informatics global technology field, Siemens Corporate Research, Princeton, USA.

Scientific Requirement : The candidate should have a Master of Science with strong background in applied mathematics and computer science. Proficient programming (C++) and mathematical skills are essential. Extensive knowledge in numerical analysis, biological modeling, medical image analysis and the knowledge of abdominal anatomy and physiology is a plus. Fluent written and spoken English is mandatory.

Contact Persons : send cover letter and CV to

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