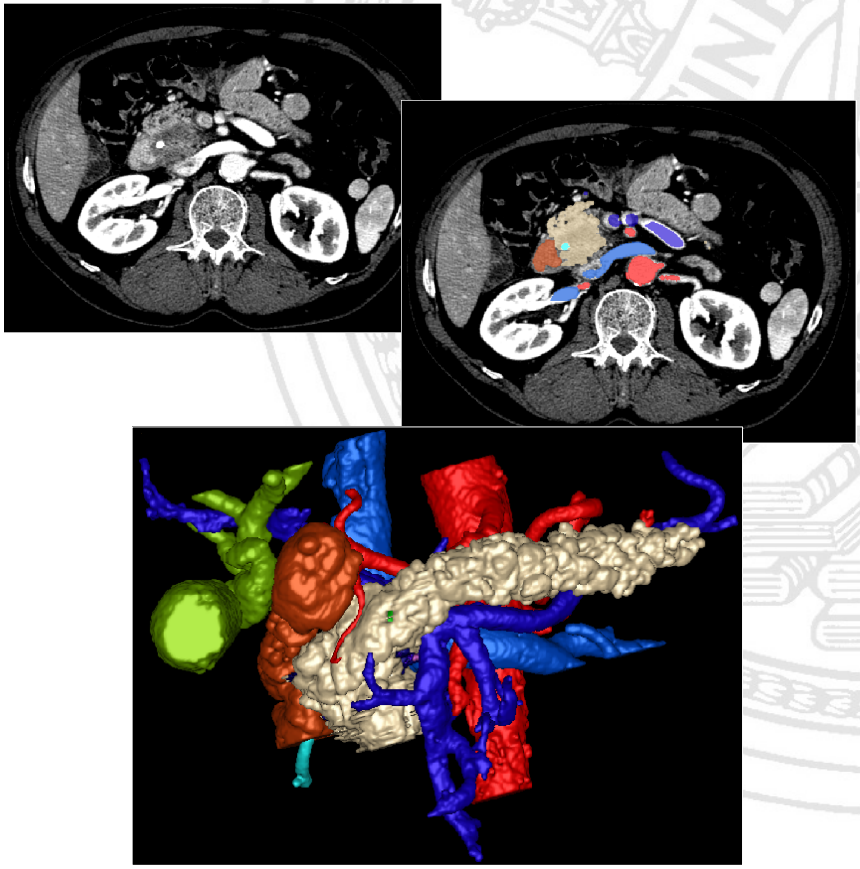
3D Recontruction of Anatomical Structures

Problem: The use of virtual and 3D printed anatomical models for surgical planning is getting wider in the last few years, but their use is still very limited in many medical fields like abdominal surgery, because of many drawbacks in the 3D reconstruction of abdominal structures. The virtual model comes from CT images elaboration, through a process called segmentation. In order to have a clinical valid model, the 3D reconstruction should be assessed by a radiologist: thus, we have to provide a 3D reconstruction system endowed with proper facilities to let the radiologist interact with the model.

Objective: Development of a routine and a proper interface to let the radiologist interact and correct the result of image segmentation, in particular in pancreatic tumor cases.



Type: Numerical

Prerequisites for numerical part:

- Good knowledge of Matlab

References:

Auricchio et al, 3D Virtual and physical pancreas reconstruction discriminating between health and tumor tissue with fuzzy logic, Int J CARS (2012) 7 (Suppl 1):S71–S88

Key Collaborations:

- Chirurgia 2, Policlinico San Matteo – Pavia
- Surgical Gastroenterology Dept., Karolinska Institutet - Stockholm

Thesis proposal