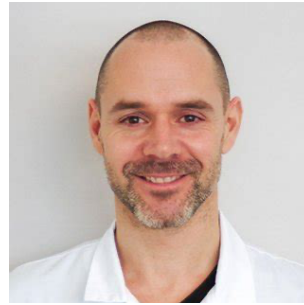


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Foot image segmentation to automatically generate a 3D object for pre-planning foot surgery

Who are the patients?

Patients presenting foot deformities necessitating a surgical intervention to correct them.

What is the problem?

Foot is composed of many bones which make a challenging object to model in 3D. In order to correctly anticipate a surgery (preclinical planning), different measurements should be obtained from the different bone composing the foot to eventually correct deformities that are affecting the functionality of the foot. The conventional foot imaging is obtained through slices obtained from a CT-scan.

What is the need?

To obtain a volumetric object representing the foot in 3D, the CT-slices need to be segmented. This procedure is very time consuming and to segment a CT of a foot with its 23 bones requires about 6-7 hours. The aim of this study is to "train" a so-called artificial neural network to perform the above segmentation independently, reliably and quickly.

What is the benefit (if problem were solved)?

If a 3D representation of the knee could be easily obtained it would become relevant in clinical practice for planning corrective surgery.

Wrap up

Based on furnished CT data of feet, an algorithm will be developed to automatically reconstruct 3D images of normal and pathological feet