



Research project

In-silico investigations of biological tissues, such as finite-element simulations, rely on data that ideally come from medical imaging tools. For example, ultrasound imaging is a powerful method to generate geometry data non-destructively. It is thus of great interest to have automated, robust workflows that generate 3D meshes from voxel-based imaging data.

Tasks:

- Reviewing existing methods (and associated Python libraries) of edge detection, surface reconstruction and mesh generation
- Identifying and implementing a robust workflow for mesh generation from image data (voxel-based/point clouds)
- Eventually comparing different approaches

Requirements:

- Basic programming skills (Python)
- Motivation to dive into image processing tools, Python libraries, etc.

Language:

English or German

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**An automated
mesh generation
workflow from
ultrasound data**

