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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