Advancing Healthcare Through Open Science: StudierFenster and MedShapeNet

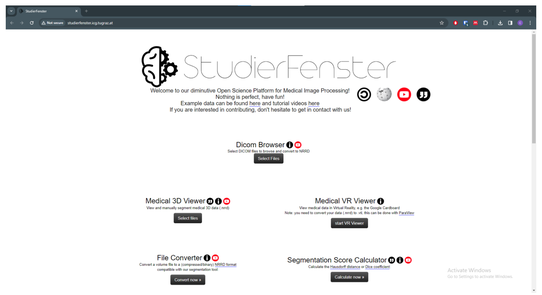
Christina Gsaxner[1,2], Gijs Luijten[1,2], Jianning Li[2], Jens Kleesiek[2], Behrus Puladi[3] and Jan Egger[1,2].

[1]Graz University of Technology, [2]University of Duisburg-Essen, [3]RWTH Aachen.

StudierFenster [1]

Goals:

- Easily accessible, free medical image analysis
- Acces via browser, no updates, no maintenance
- Integration of open-source toolkits for versatile support



Capabilities:

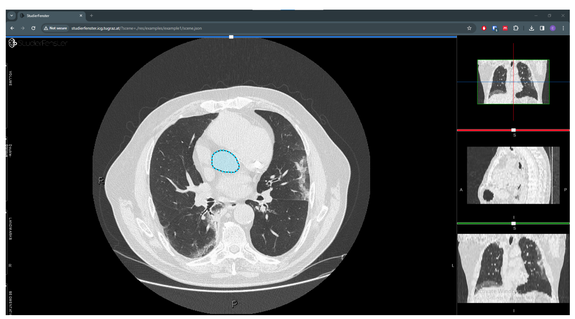
- DICOM browsing & conversion,
- 2D and 3D medical viewing,
- manual segmentation & landmarking tools,
- Automatic landmarking,
- 3D reconstruction and completion,
- Medical image inpainting, ...

We introduce two **open science** initiatives: **StudierFenster**, an open, browser-based framework for biomedical image analysis, and **MedShapeNet**, a comprehensive repository of medical shapes.

Try out **StudierFenster**!

Visit **MedShapeNet**!

Example application of StudierFenster: Manual segmentation of CT images directly in the web browser.

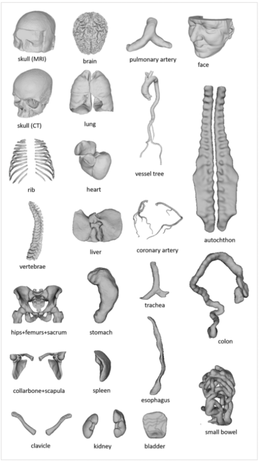


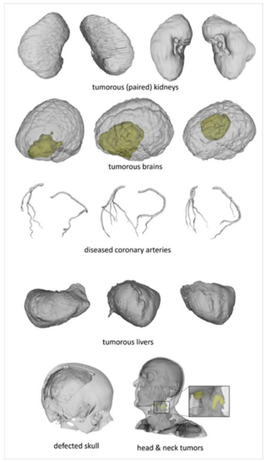
Example use case of MedShapeNet: Using the shapes in extended reality.

MedShapeNet [2]

Goals:

- Close the gap between medical imaging and 3D Deep Learning
- Provide medical shape data from real patients
- Make data accessible and free





Capabilities:

- Over 100.000 medical shapes from over 30 sources and 100 contributors
- Accessible via web interface & Python API
- Benchmarks for discriminative, reconstructive, and variational tasks
- Use cases in classification, skull reconstruction, anatomy completion, and extended reality

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[1] Egger et al., "Studierfenster: an Open Science Cloud-Based Medical Imaging Analysis Platform". *Journal of Digital Imaging*, 2022.

[2] Li et al., "MedShapeNet–A Large-Scale Dataset of 3D Medical Shapes for Computer Vision". *arXiv preprint*, 2023.

TU Graz

Universitätsmedizin Essen
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