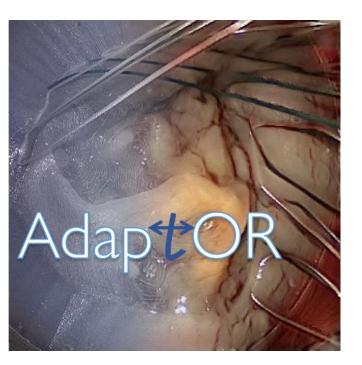


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TECHNISCHE UNIVERSITÄT DARMSTADT



Labeling Strategy

Deep Generative Models for Domain Adaptation in Surgery

> Document v. 1.0 Dec 9, 2020

Start Labelme

- https://github.com/wkentaro/labelme
- Start the application:
 - conda activate labelme
 - cd /d PATH_TO_TEXTFILES
 - labelme --labels Labels.txt --flags difficultyFlags.txt
- PATH TO TEXTFILE Path to Labels.txt and difficultyFlags.txt (self-configured files)
- Program should look like this \rightarrow

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Settings

- a) File > Open Dir (Location where to save images)
- b) File > Save With Image Data (disable)
- File > Change Output Dir (Location where to save JSON files)
- d) File > Save Automatically (enable)
- e) Edit > Keep Previous Annotations (enable)

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Label Strategy (1/2)

- Edit > Create Point, Create Line
- Mark Entry- and Exitpoints of sutures into the "tissue"
 - We marked corresponding points in upper and lower image by a line
 - if the point of interest was only visible in one image of the stereo-pair, we marked it with a point; the other point was not annotated
 - Please note that the point correspondences are not considered in this challenge. We treat the stereo-images completely independent.
- The point was only annotated if the need was completely through the *"*tissue"
- The flags easy/medium/hard are set per image, which indicate whether the current image is difficult to annotate or not.
 - This relects the subjective impression by the annotator and mainly refers to occlusions and brigthness

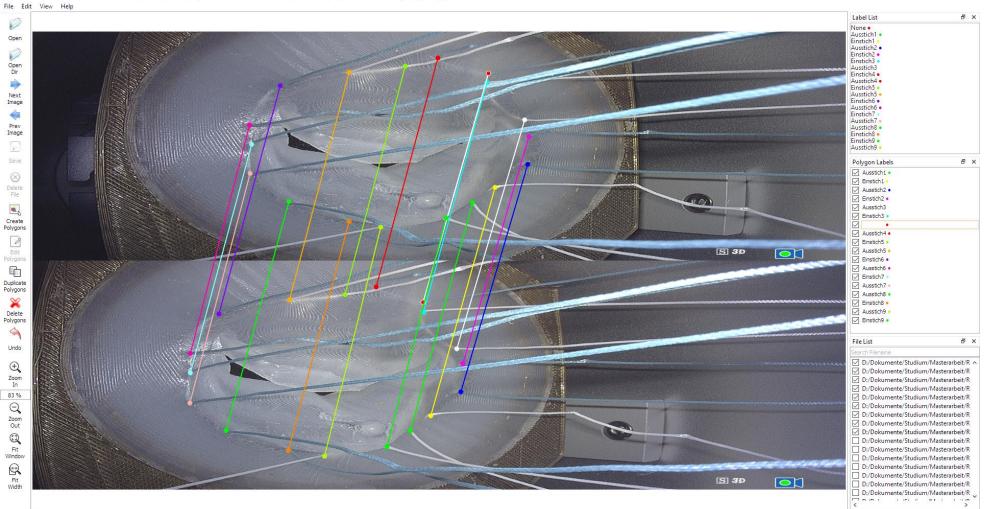
Label Strategy (2/2)

 Frames were labeled in temporal order, which allowed to use the option "Keep Previous Annotations", such that only minor adjustments had to be made by the annotator

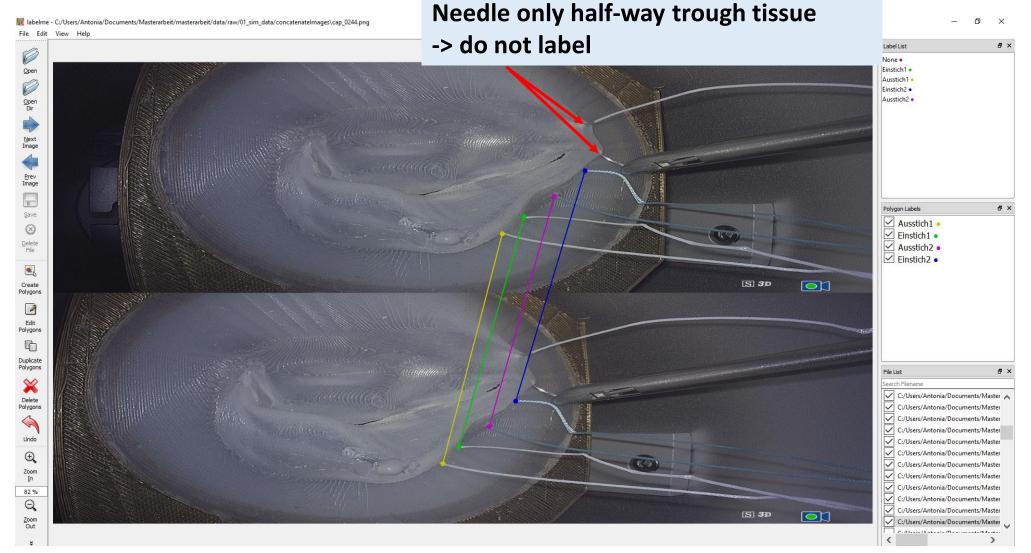
Example: Annotated File

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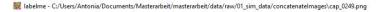
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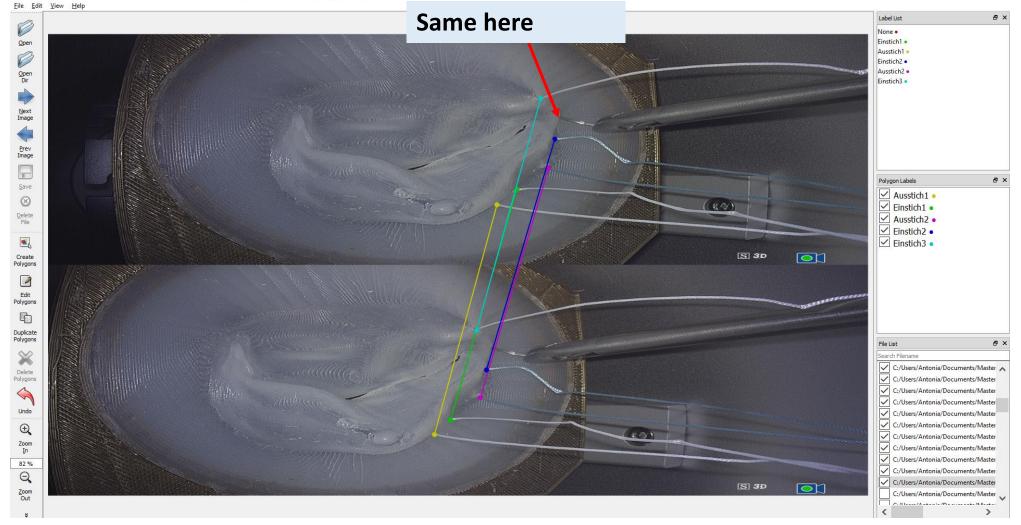
Example: Needle



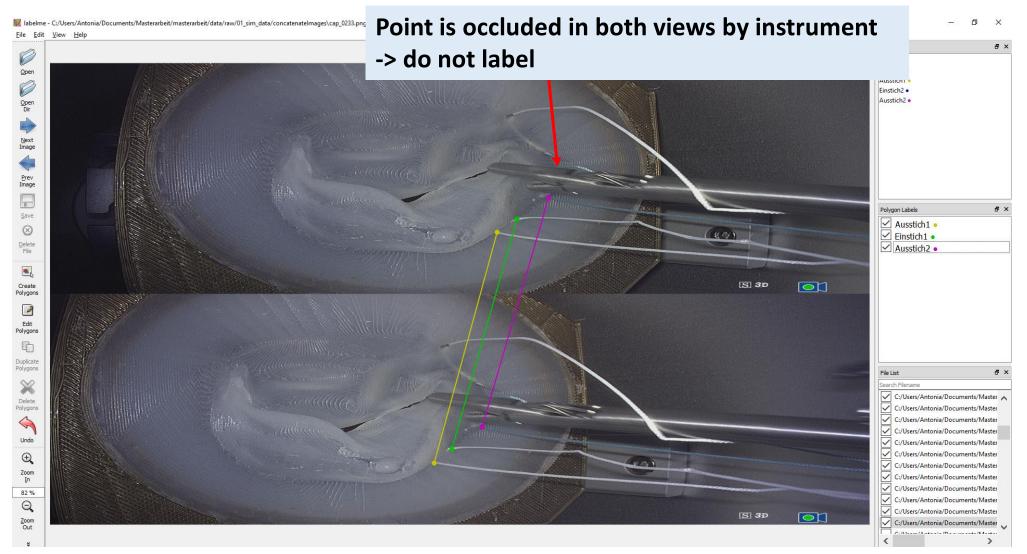
Example: Needle



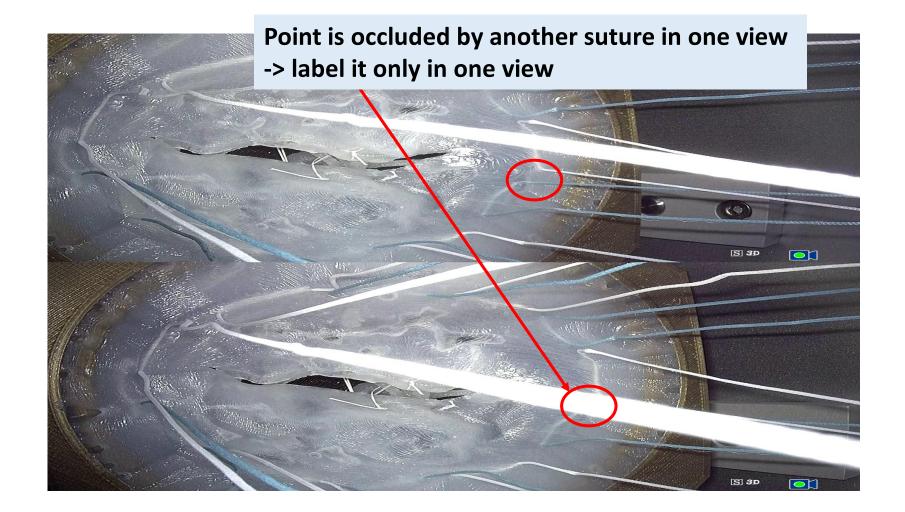
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Example: Occlusion by instrument



Example: Occlusion by suture



Example: Overexposure (Flag: medium/hard)

