

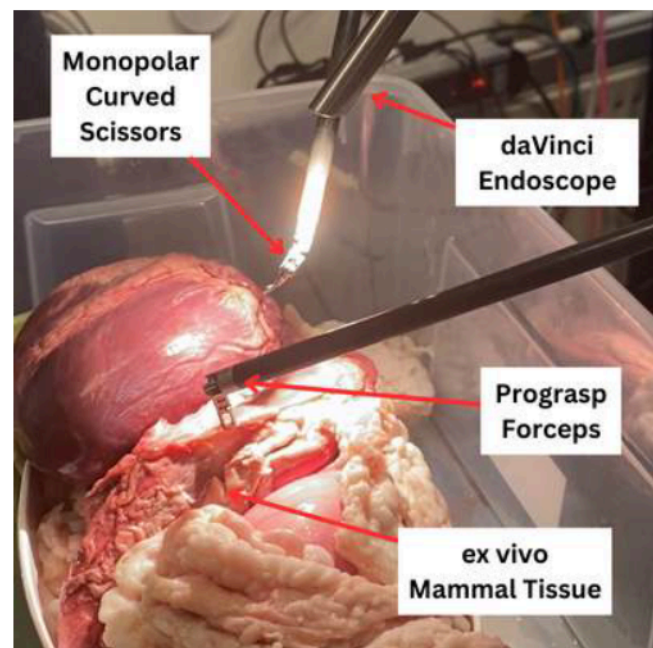
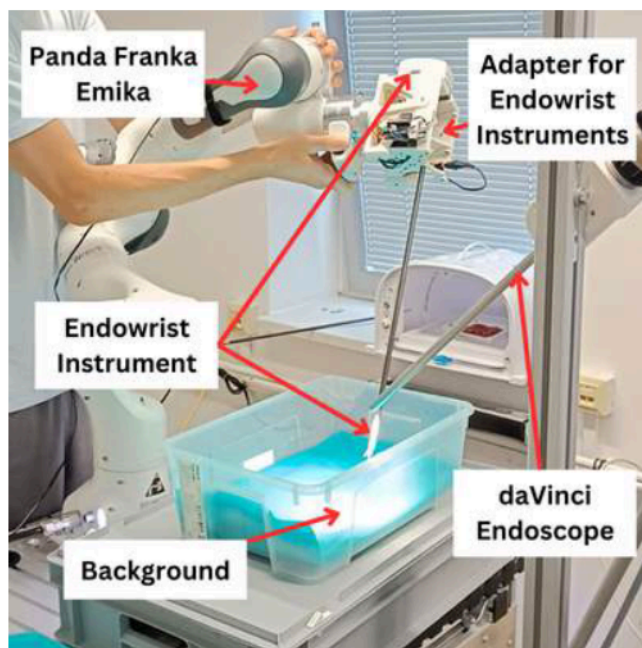
Data Description

Summary

Multiple videos of the daVinci endowrist Instrument were taken with a daVinci endoscope. This dataset contains only the left images of the stereo camera. There are videos with plain green background and simple movements as well as simple movements with a simulated upper abdominal area recorded with mammal tissue. A third part in the folder sequences, are longer videos of complex movements with up to two instruments and occasionally steam or blur in it.

Data Acquisition

For the data acquisition tissue or the green background was placed in front of the endoscope. The instruments were then mounted to a serial manipulator using an adapter. Through the adapter it is possible to move the endeffector of the endowrist instruments. The robot was operated by hand and used to get steady movement of the instruments. Steam was generated by cauterization of tissue.



Imaging Parameters

- Format: .avi
- Resolution: 1920x1080
- Framerate: 30fps

Labeling

A labeled file name can look like this: **b01_i02_a02_20240815_150046_left.avi** where b# is the background, i# is the instrument and a# is an action recorded.

Background

- 00 Green background
- 01 Tissue background
- 02 Tissue with steam
- 03 Tissue with fluid on the lense

Instruments

- 00 No Instrument
- 01 Large Needle Driver
- 02 Prograsp Forceps
- 03 Monopolar Curved Scissors

Actions

- 00 Still (Instrument is still without tissue contact)
- 01 Open (Instrument opens)
- 02 Close (Instrument closes)
- 03 Travel (Instrument movement without tissue contact)
- 04 Push (Instrument movement with tissue contact)
- 06 Pull (Instrument movement with tissue in the instrument)
- 07 Hold (Instrument is still with tissue contact)
- 08 Cut (scissor cuts)

Examples

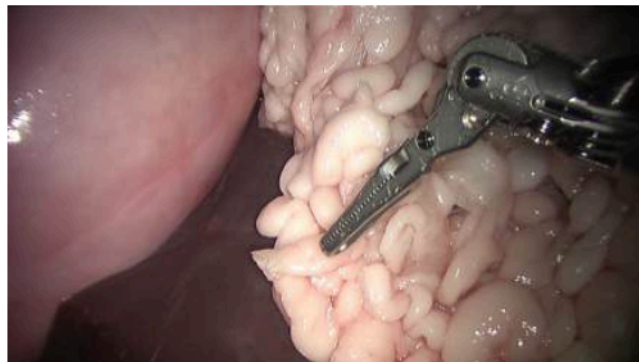
b00_i01_a02_20240813_160653_left.avi

Green background, instrument: large needle driver, the performed action is closing of the instrument. The instrument is open at the beginning and will be closed at the end of the video



b01_i02_a01_20240815_153231_left.avi

Tissue background, instrument: prograsp forceps, the performed action is opening of the instrument. The instrument is closed at the beginning and will be open at the end of the video



b01_i02_i03_ablauf_20240819_153336_left.avi

Tissue Background, instruments are: prograsp forceps and monopolar curved scissors, ablauf means that there are multiple actions in this video



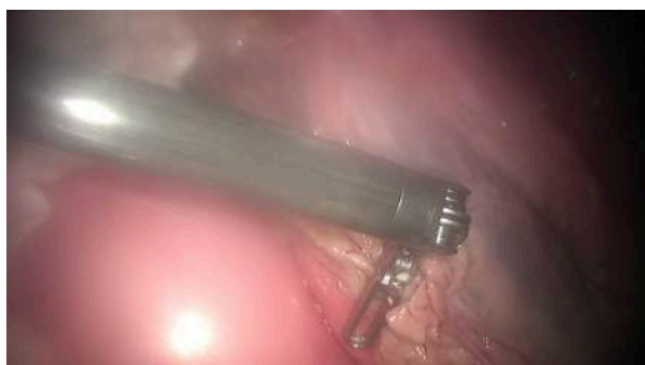
b02_i02_i03_ablauf_20240819_155118_left.avi

Tissue background with steam, instrument: monopolar curved scissors, there are also multiple actions in this video



b03_i02_ablauf_20240819_151938_left.avi

Tissue background with grease on the lense, instrument: prograsp forceps, there are multiple actions in this video



b00_i00_20240813_150019_left.avi

plain green background, no instrument, no action

