

Tiefe Neuronale Netze für die bildbasierte Segmentierung und Lokalisierung chirurgischer Instrumente

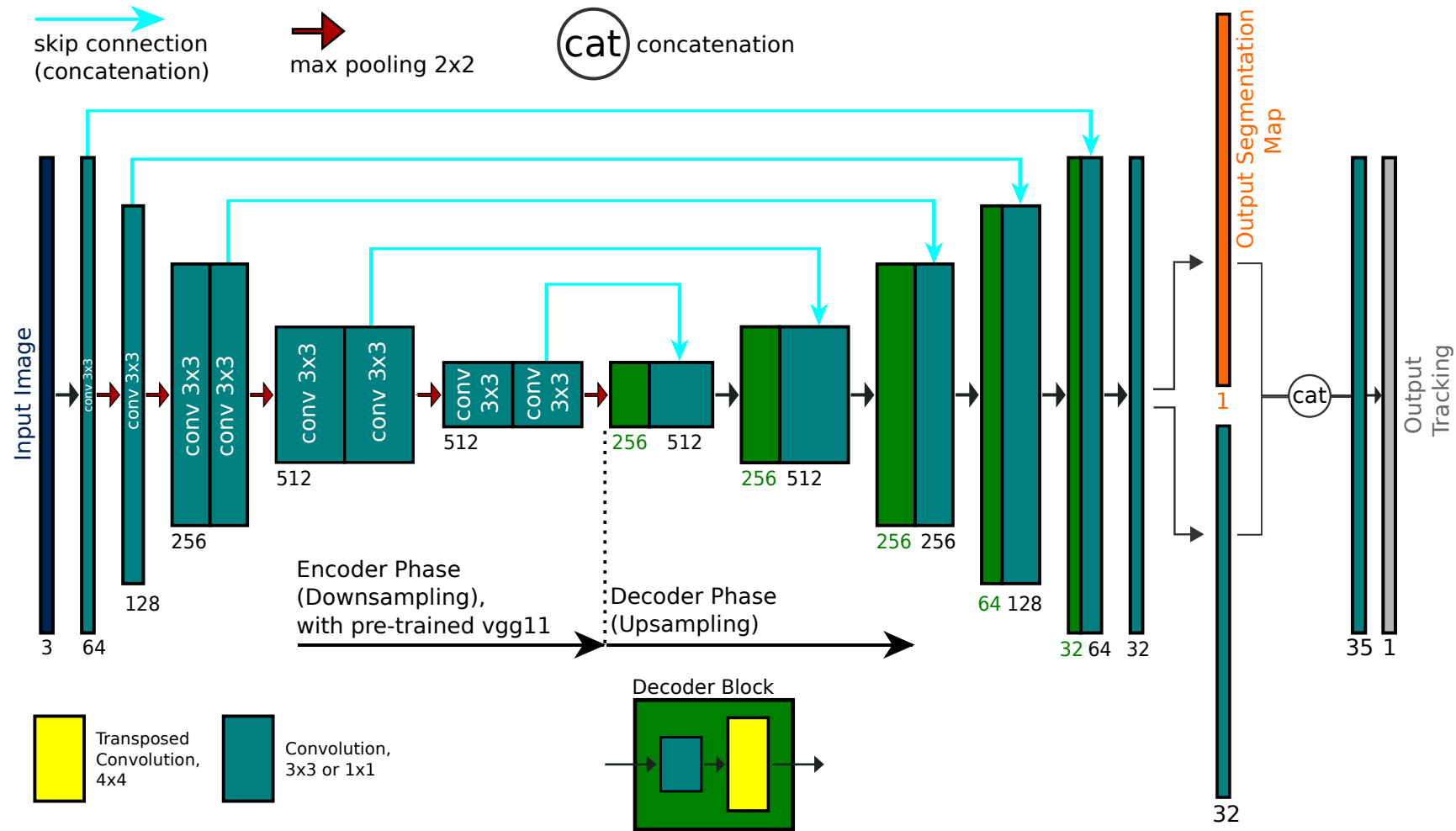
Bachelorarbeit - Amelie Wagner



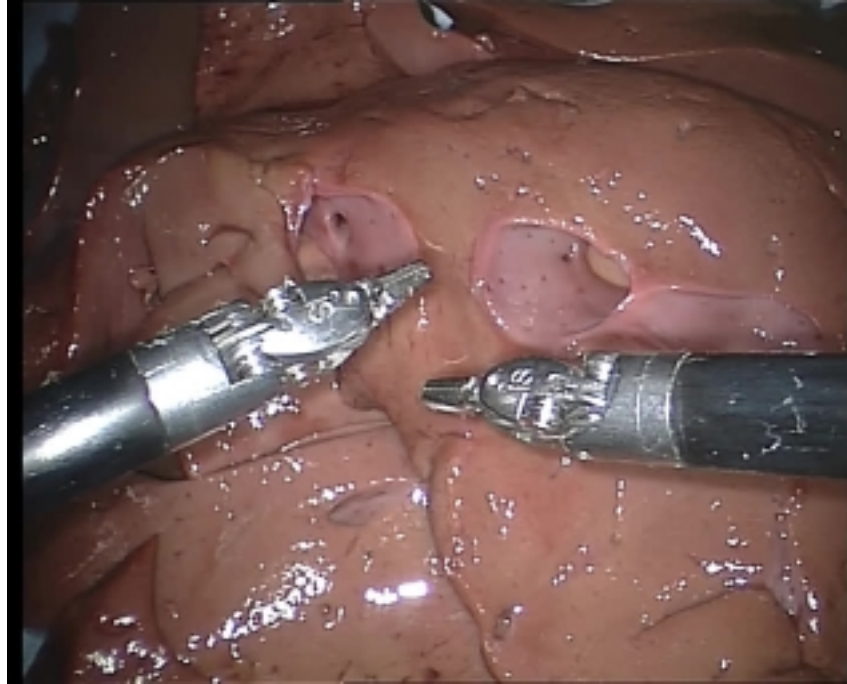
NATIONAL CENTER
FOR TUMOR DISEASES
PARTNER SITE DRESDEN
UNIVERSITY CANCER CENTER UCC

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German Cancer Research Center
University Hospital Carl Gustav Carus Dresden
Carl Gustav Carus Faculty of Medicine, TU Dresden
Helmholtz-Zentrum Dresden-Rossendorf

Netzwerkstruktur: modifiziertes U-Net [1]



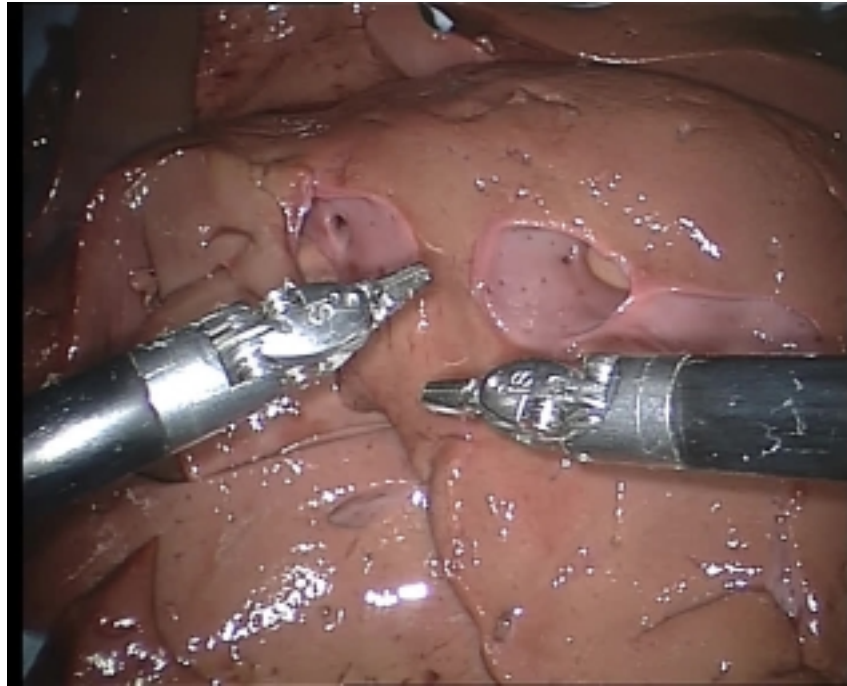
2 Instrumente,
EndoVis15 subchallenge [1]



2 Instrumente,
EndoVis15 subchallenge [1]
+ Ground truth Lokalisierung



2 Instrumente,
EndoVis15 subchallenge [1]



2 Instrumente,
EndoVis15 subchallenge [1]
+ Ground truth Segmentierung

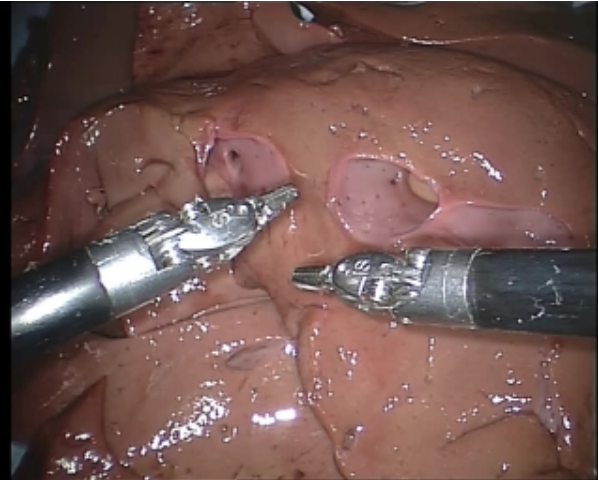


Ergebnisse:

Training mit 100 Epochen

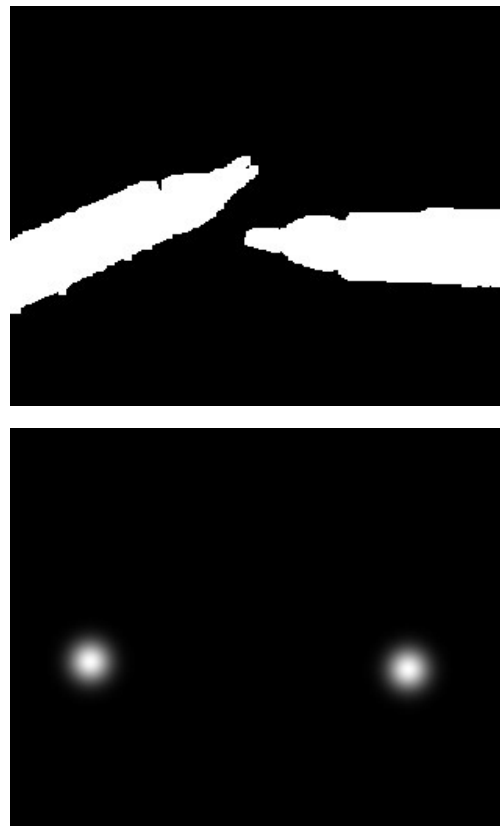
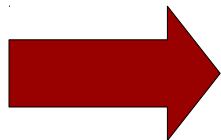
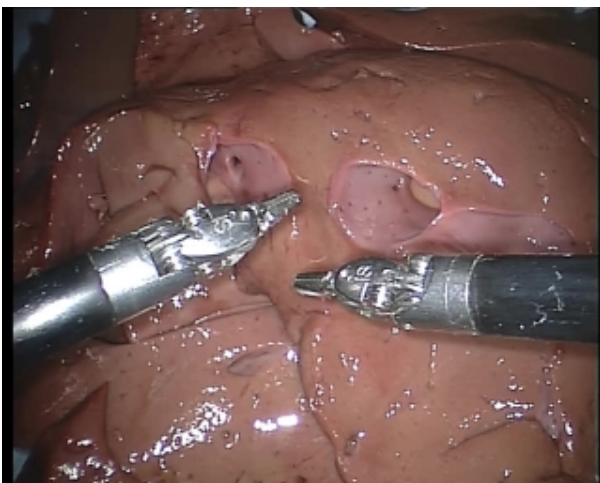
Ergebnisse

- 2 Instrumente, EndoVis15 tracking subchallenge [2]
- Training: 100 Epochen



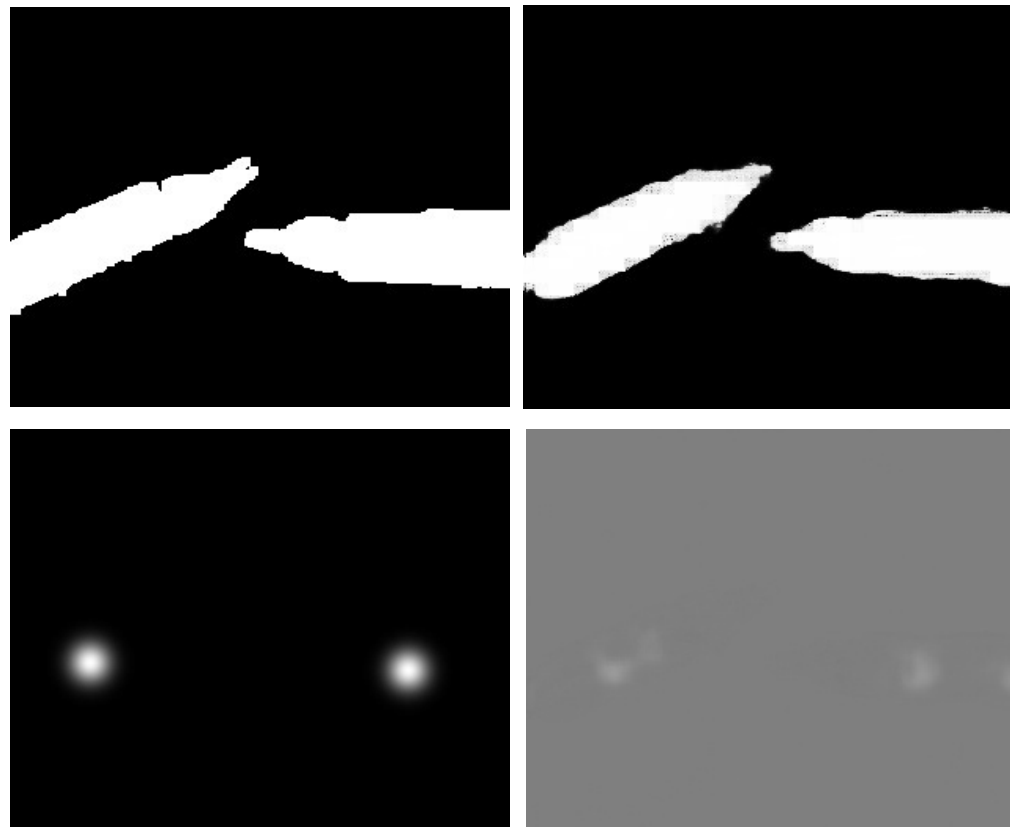
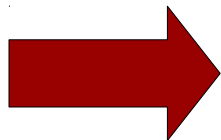
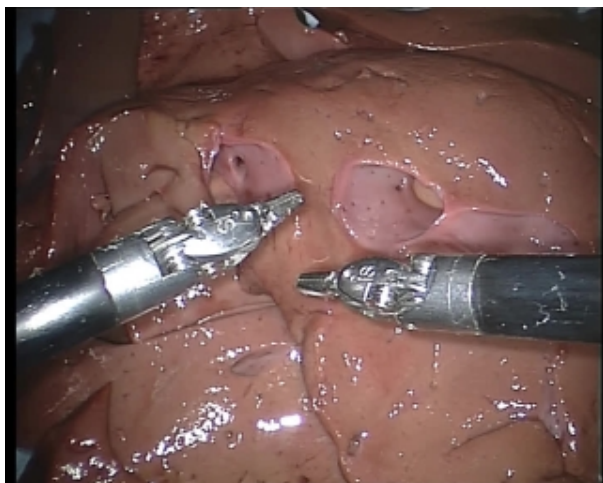
Ergebnisse

- 2 Instrumente, EndoVis15 tracking subchallenge [2]
- Training: 100 Epochen



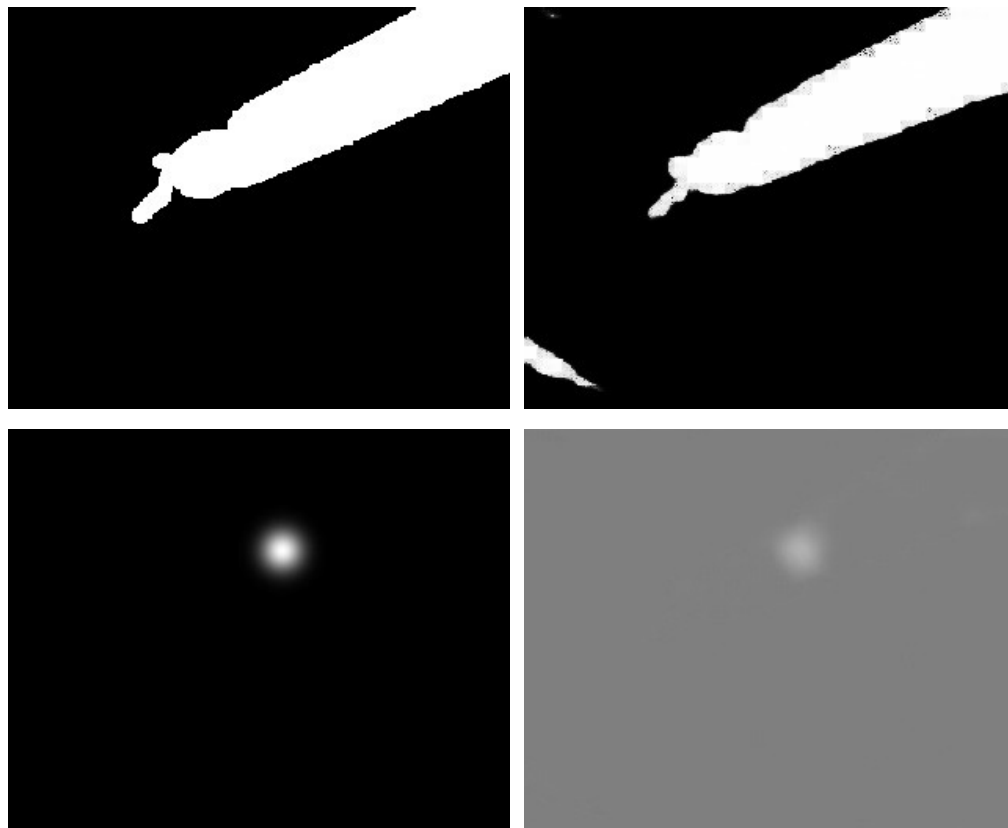
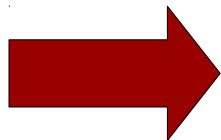
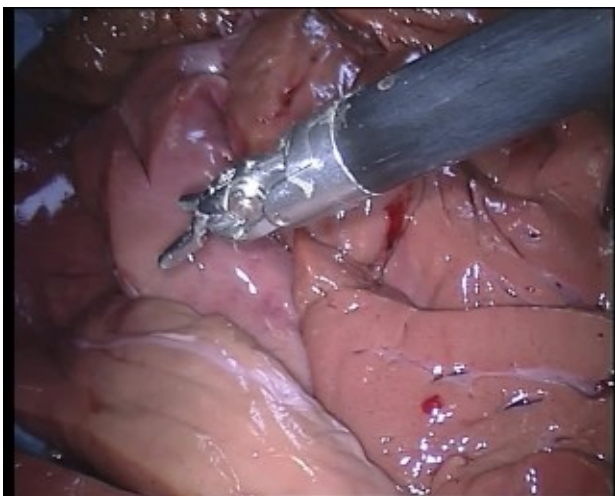
Ergebnisse

- 2 Instrumente, EndoVis15 tracking subchallenge [2]
- Training: 100 Epochen



Ergebnisse

- 1 Instrument, EndoVis15 tracking subchallenge [2]
- Training: 100 Epochen

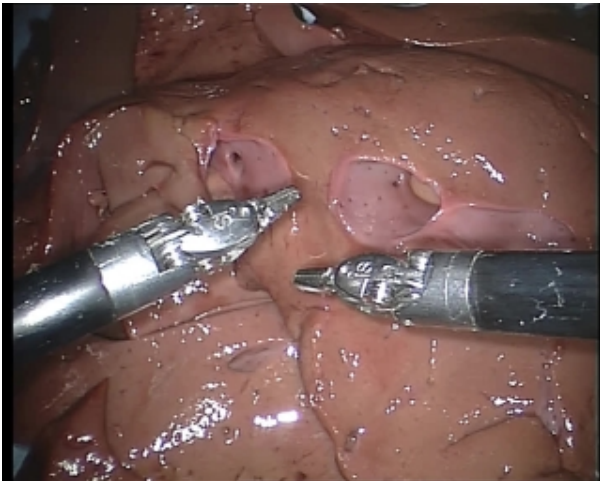


Ergebnisse:

Training mit 900 Epochen

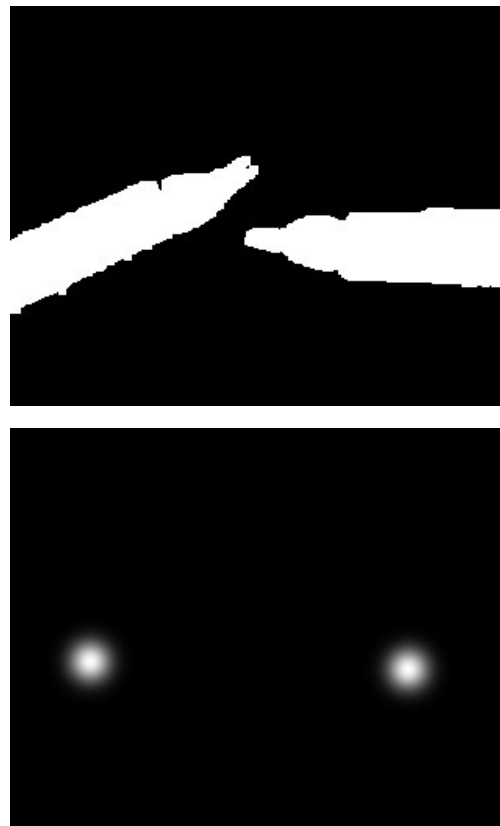
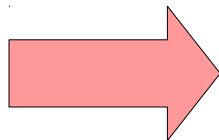
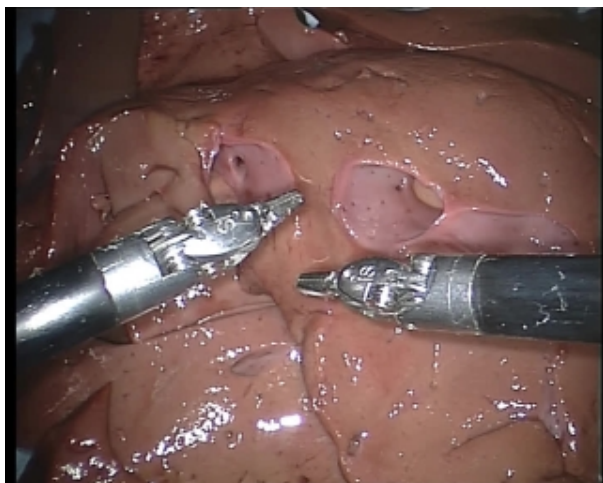
Ergebnisse

- 2 Instrumente, EndoVis15 tracking subchallenge [2]
- Training: 900 Epochen



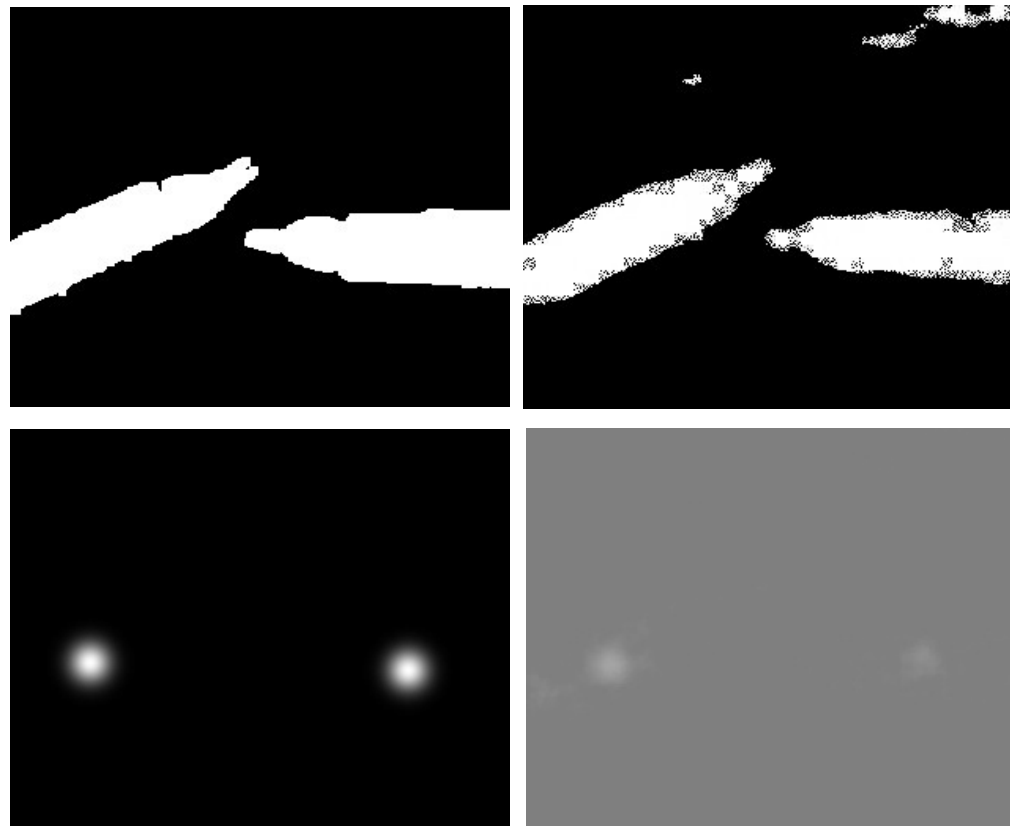
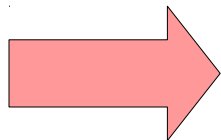
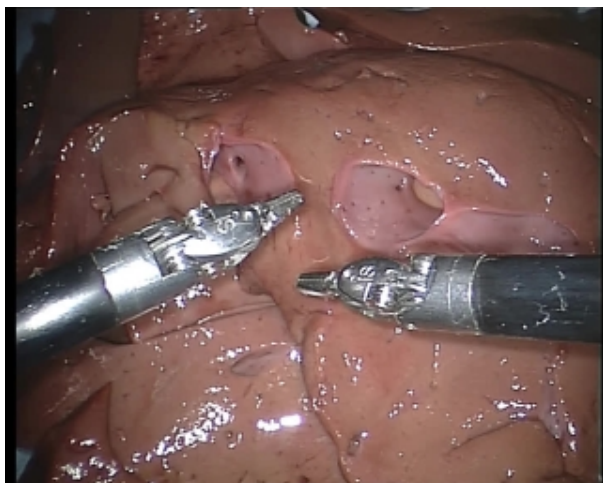
Ergebnisse

- 2 Instrumente, EndoVis15 tracking subchallenge [2]
- Training: 900 Epochen



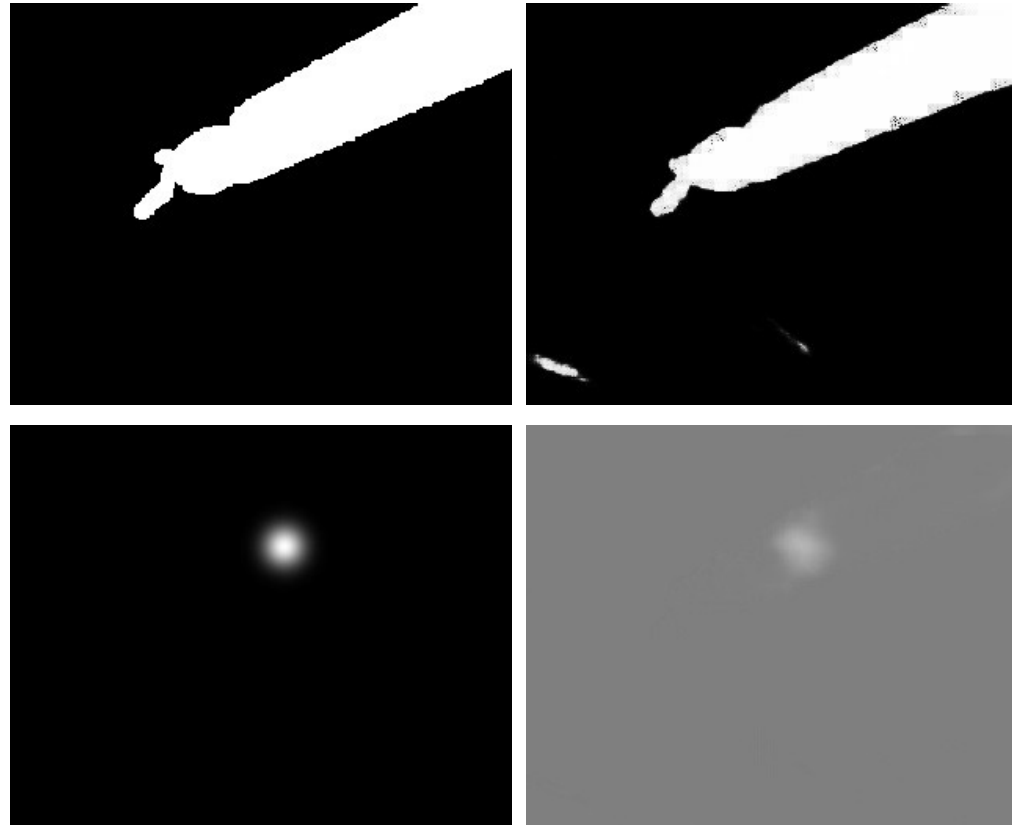
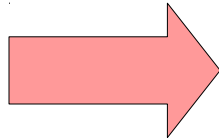
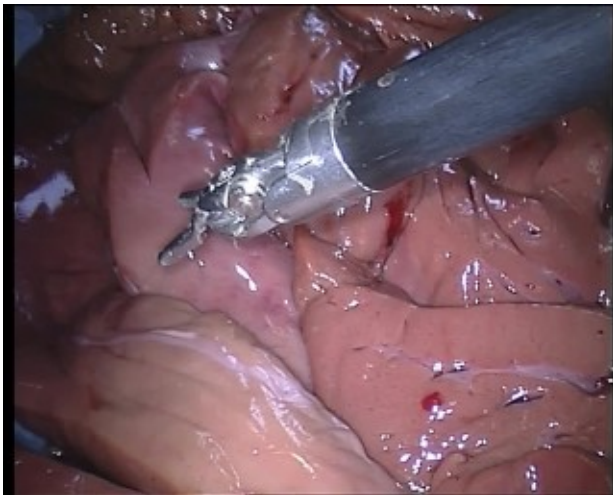
Ergebnisse

- 2 Instrumente, EndoVis15 tracking subchallenge [2]
- Training: 900 Epochen



Ergebnisse

- 1 Instrument, EndoVis15 tracking subchallenge [2]
- Training: 900 Epochen



Quellen

- [1] A. Shvets, A. Rakhlin, A. A. Kalinin, and V. Iglovikov, “Automatic Instrument Segmentation in Robot-Assisted Surgery Using Deep Learning”
- [2] <https://endovissub-instrument.grand-challenge.org/Data/>