

Endoscopic Imaging

Bildbearbeitung im Operationssaal



Hospitation im

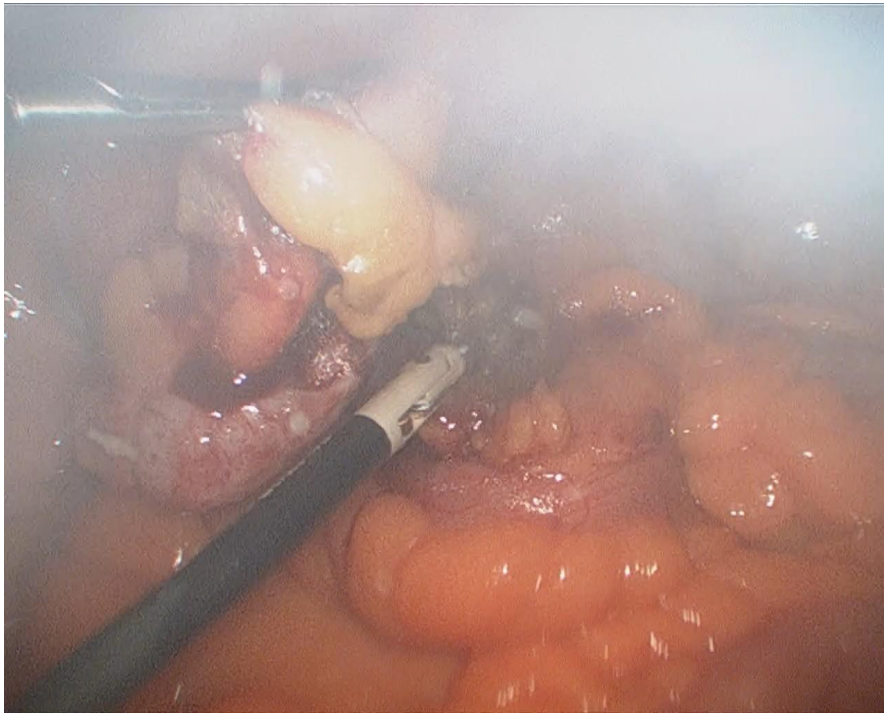
*Gesundheitszentrum
Blaubeuren*

Dr. Tannheimer, (Dr.
Lotspeich)
Cholezystectomie

Ideen:

- Kamera in Veres Kanüle
- WiFi- Endoscope

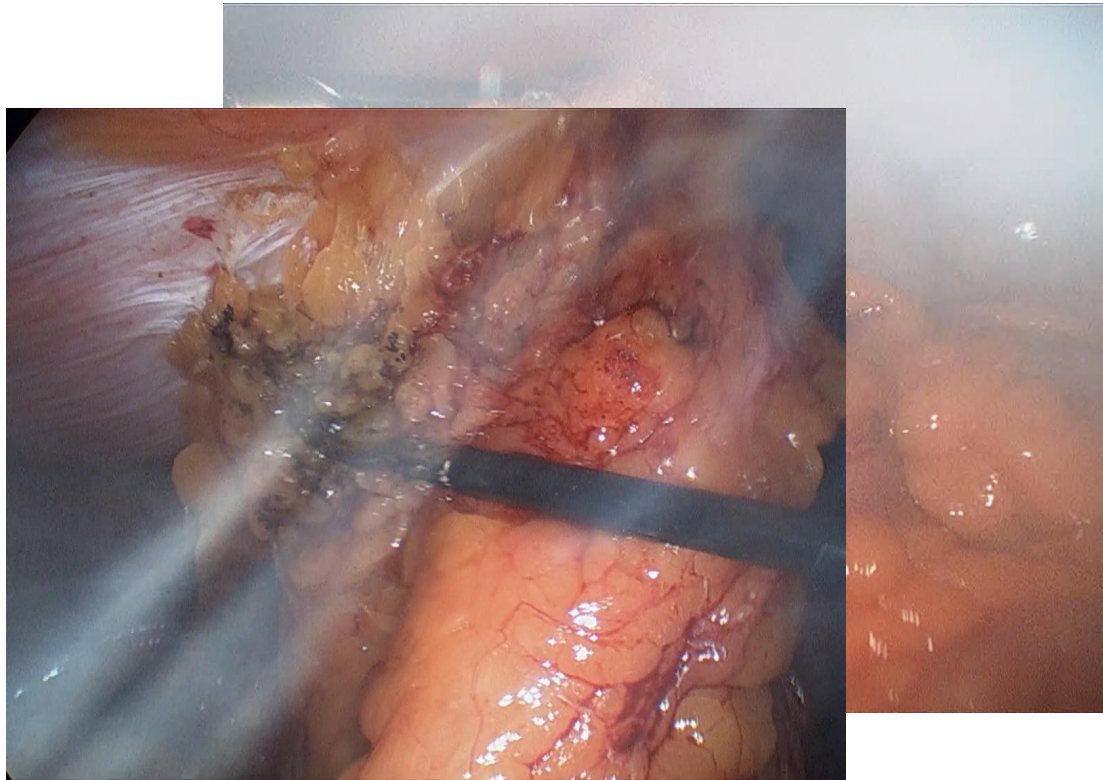




Störungen

- Rauch
- Dampf
- Spritzer

Entfernen



Störungen

- Rauch
- Dampf
- Spritzer

Entfernen

Operationssaal

Creating safety.
With passion.

NewTec



Anforderungen

- Kosten Sparen
- Aufwand gering halten

***Keine
extra
Hardware***

Operationssaal

Creating safety.
With passion.

NewTec



Anforderungen

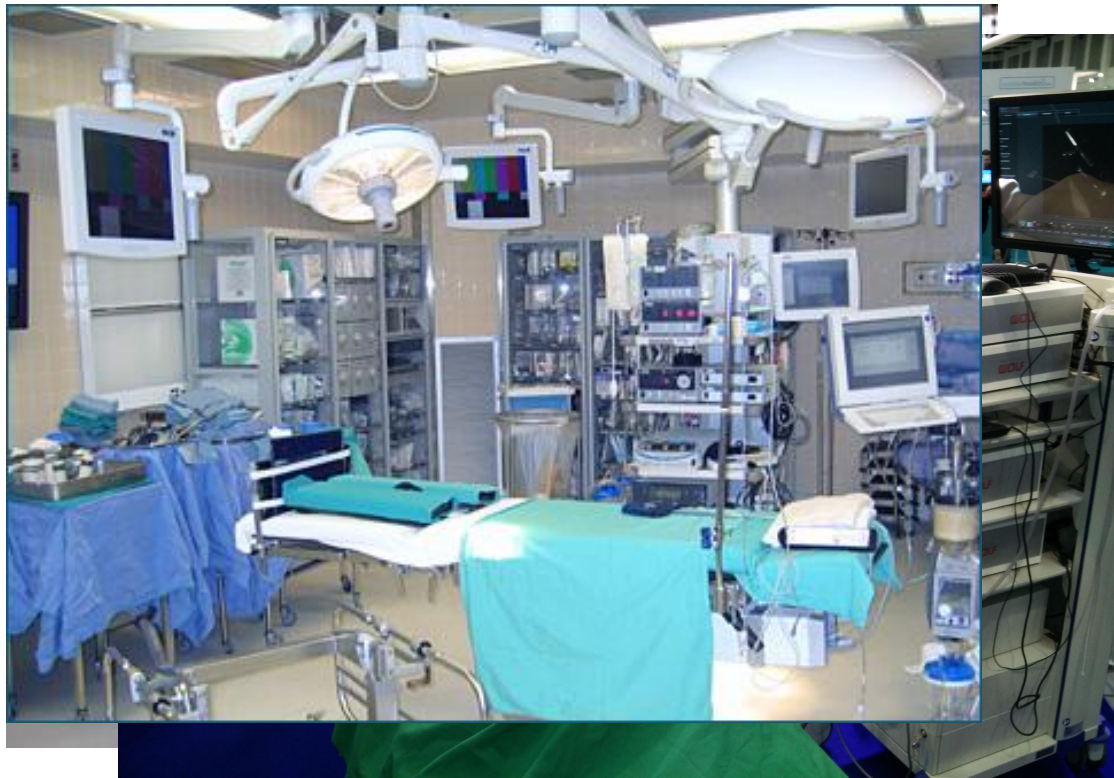
- Kosten Sparen
- Aufwand gering halten

*Keine
extra
Hardware*

Operationssaal

Creating safety.
With passion.

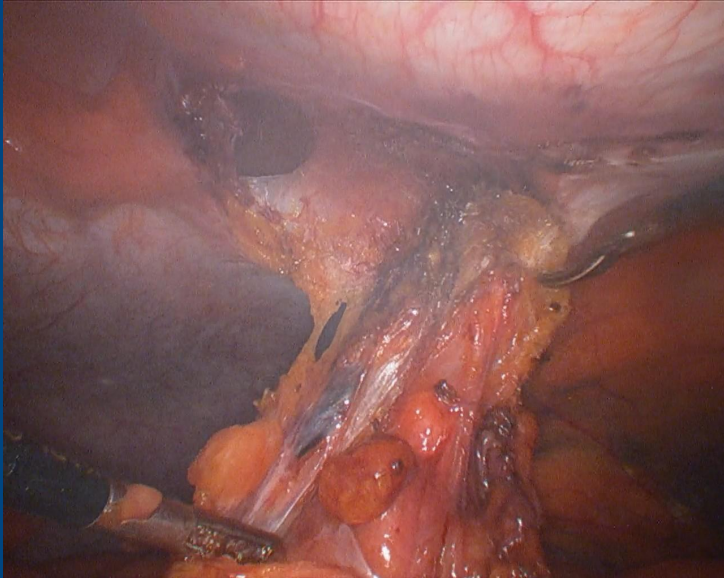
NewTec



Anforderungen

- Kosten Sparen
- Aufwand gering halten

*Keine
extra
Hardware*



Beschaffung:

- Kontakt mit Ärzten
- Datenschutz

Keine Daten

Selber machen

Prototyp

Creating safety.
With passion.

NewTec



Prototyp

Creating safety.
With passion.

NewTec



Ergebnis:



Besser selber machen

Besser:

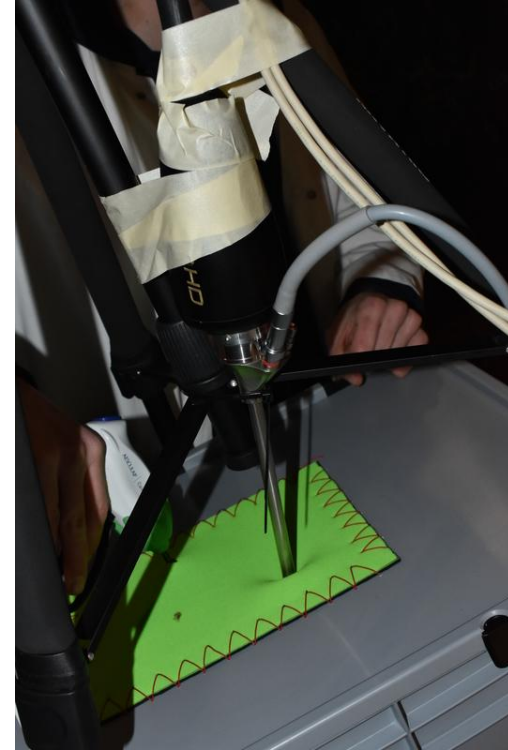
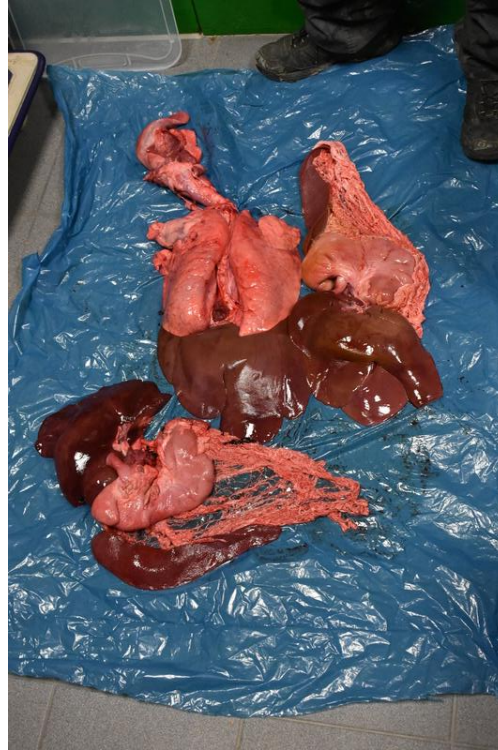
- Frische Organe
- verbessertes Phantom
- Endoscope
- Elektrokauter



Versuch

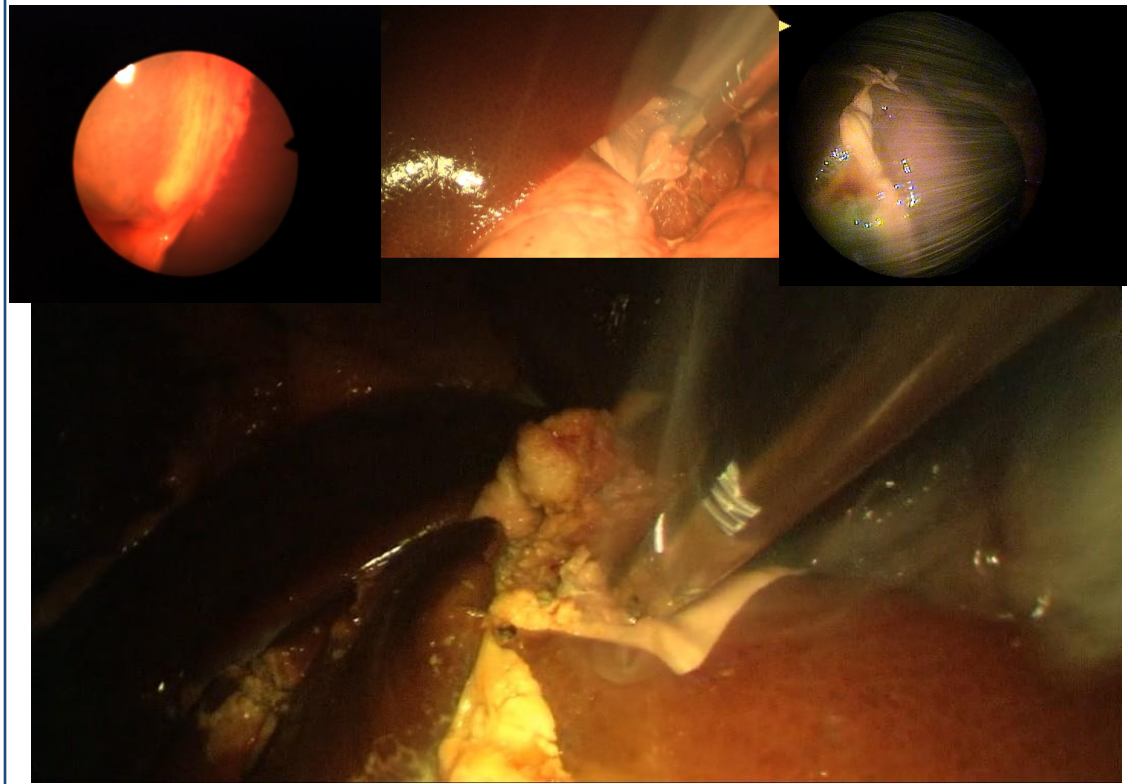
Creating safety.
With passion.

NewTec



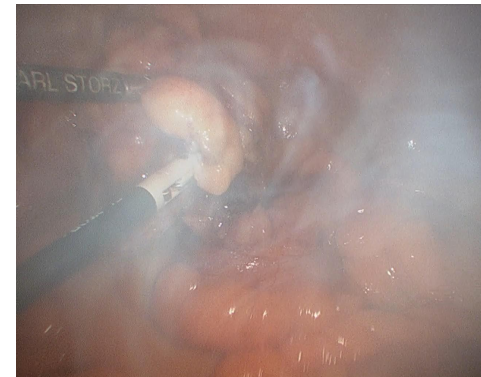
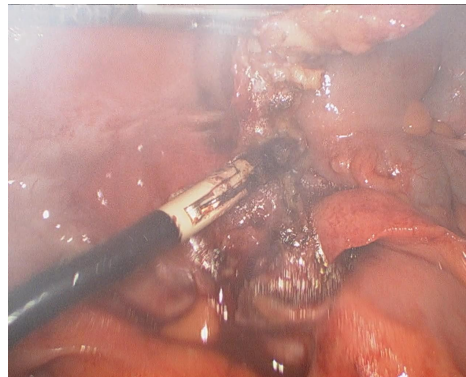
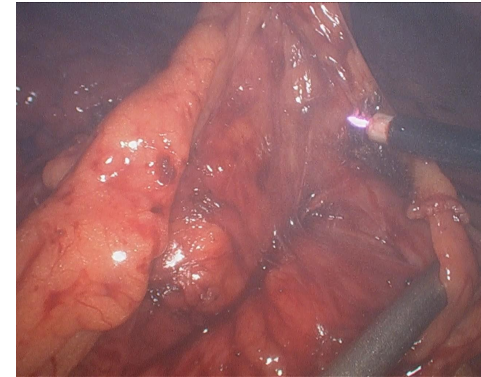
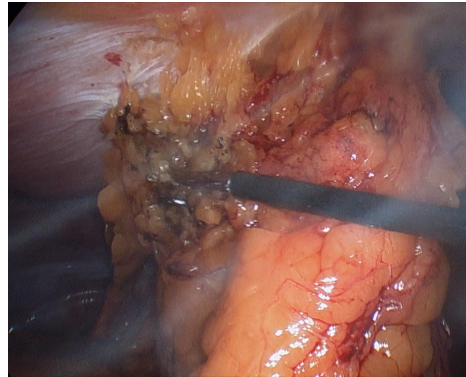
Ergebnis:

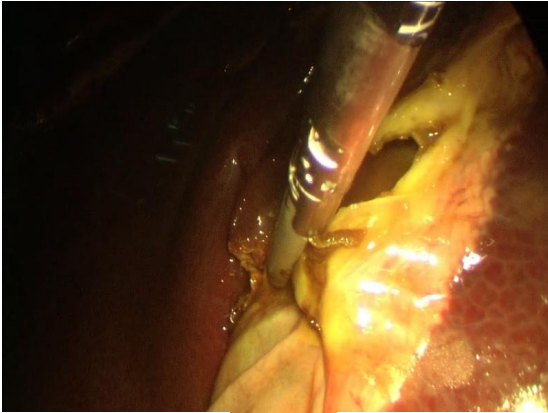
98GB Roh-Daten
mit
> 75 min Dauer



Ergebnis:

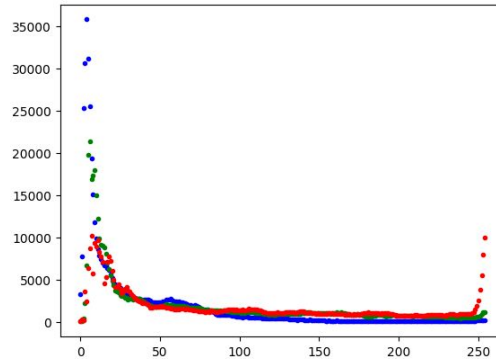
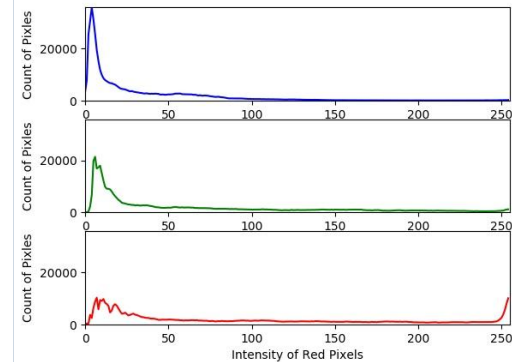
293MB Daten mit
~ 5 min Dauer





Histogramme

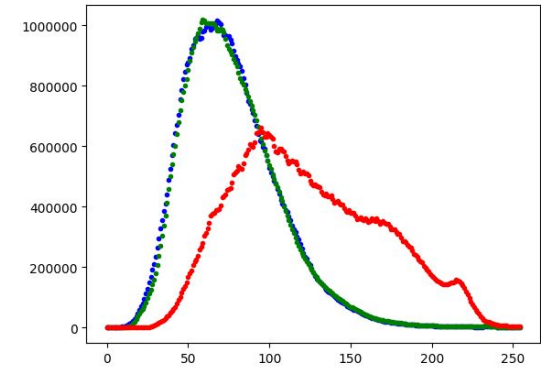
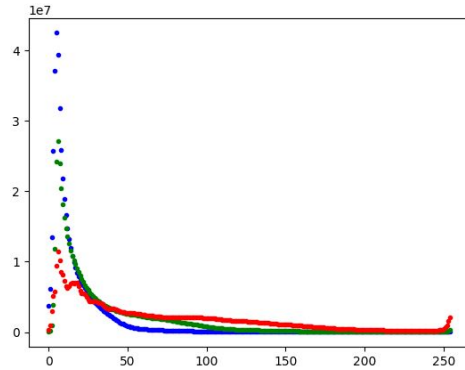
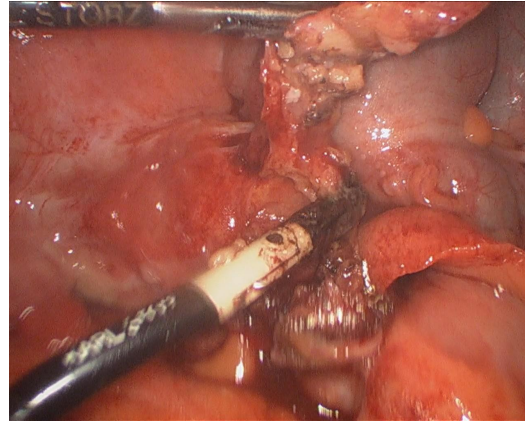
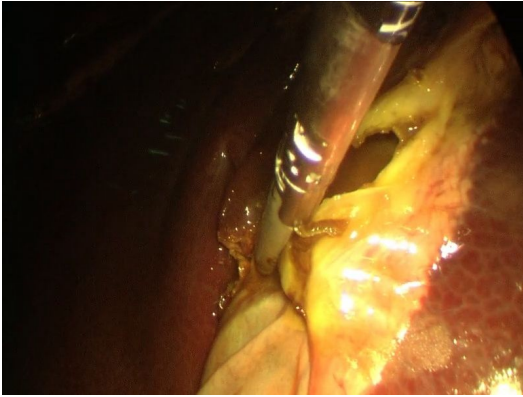
$\Sigma \{$
Anzahl[pixel(Rot)]
 $\}$



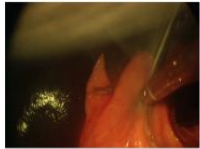
Evaluation

Creating safety.
With passion.

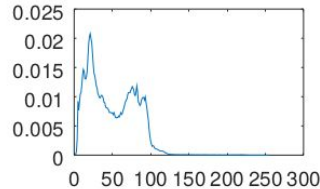
NewTec



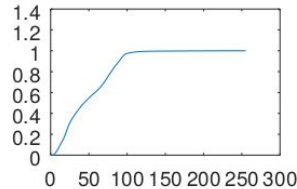
Input



frequency Histogram



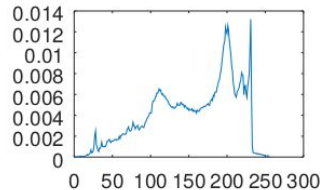
cumulated Freq Hist



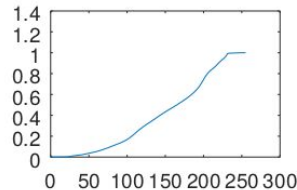
squareRoot filter



frequency Histogram



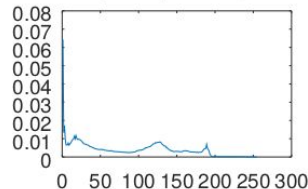
cumulated Freq Hist



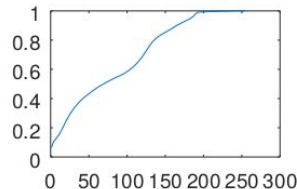
squared filter



frequency Histogram

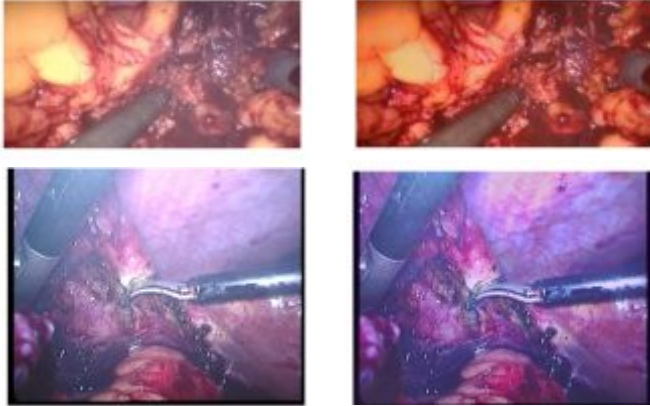


cumulated Freq Hist

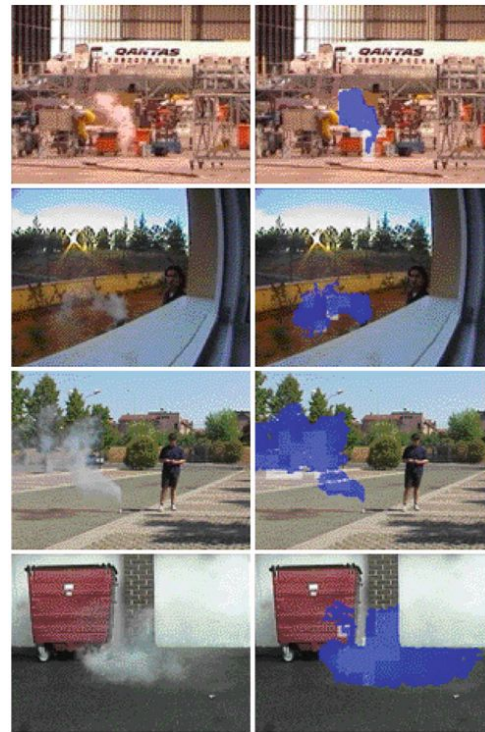
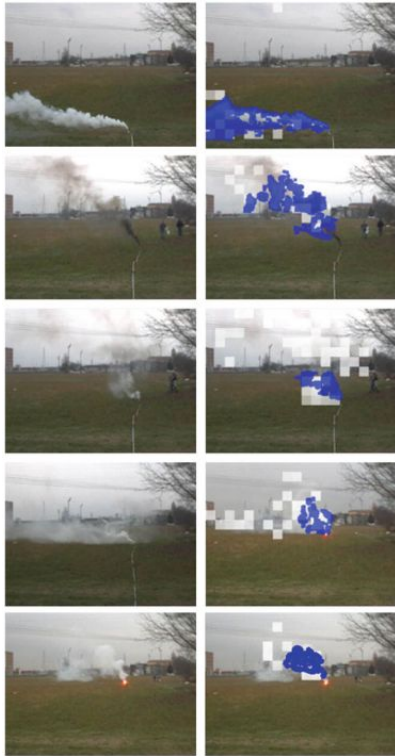


Histogram Matching

anpassung der
Kumulierten
Summe



Dark Channel Prior & Smoke Detection



Dark Channel Prior & Smoke Detection

Hasta
Luego

Thema Verfehlt