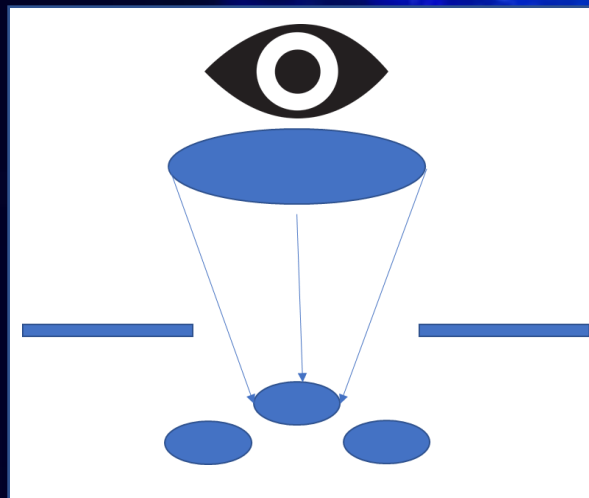


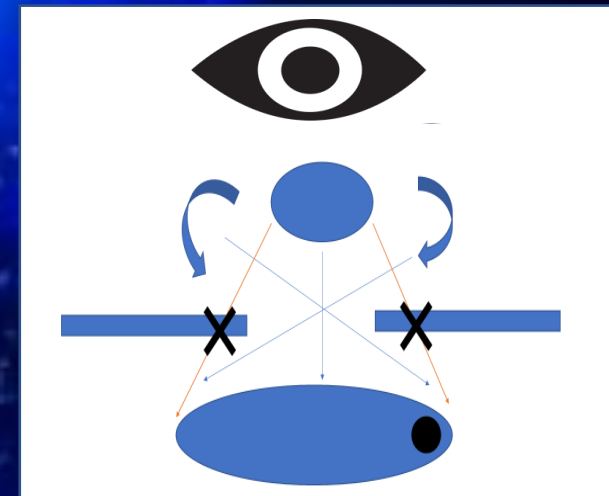
ER4Surgery team

Developing video processing algorithms to tackle visibility problems in Minimally Invasive Surgery

Standard open surgery



Minimally-Invasive Openings



Unmet need

Statistics:

- 200 M+ surgical procedures are performed each year globally.
- Despite awareness of adverse effects, surgical errors continue to occur; 4000+ surgical errors in the US annually [2015 statistics].
- Most malpractice claims in hospitals are related to surgical errors [2022 statistics].
- Medical errors account for over \$4 billion per year.

1



Problems of common solutions:

1. Surgeons must switch their gaze between screens and oculars to see all areas of the target tissue.
2. Instruments are blocking the view in narrow openings



Properties of the developed algorithm

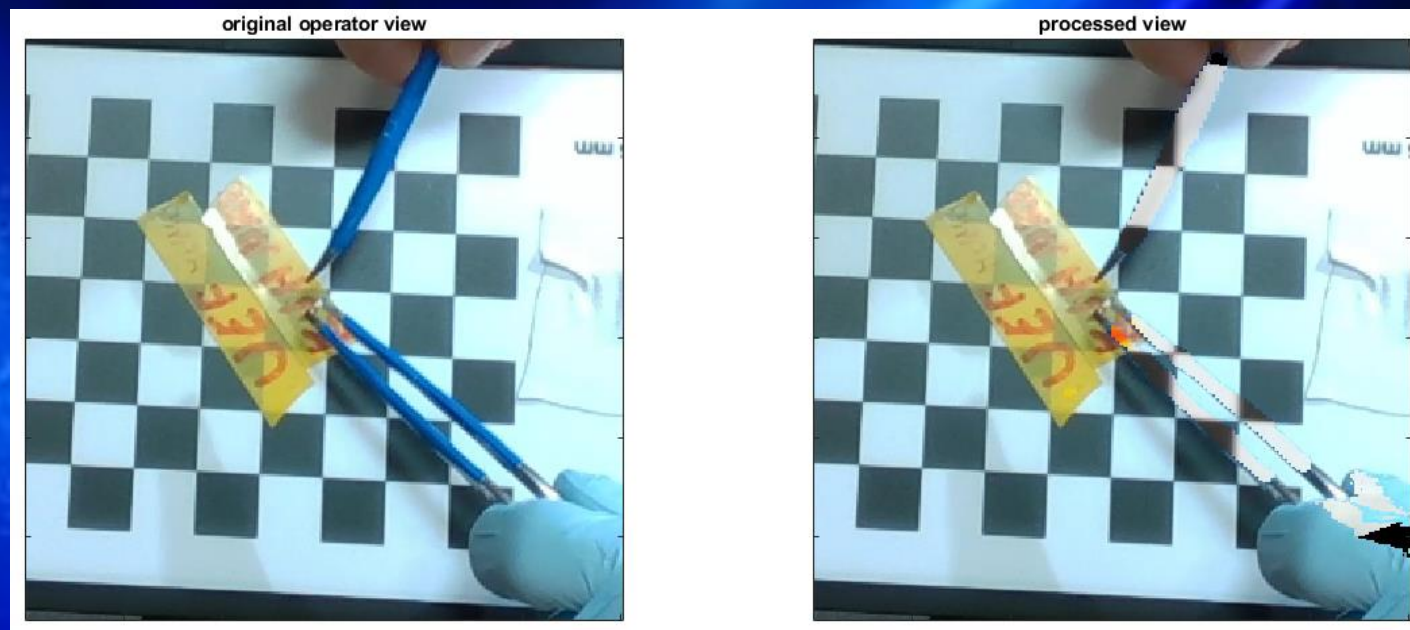
1

Fusing video camera feeds of different zoom level
-> ability to zoom from 1 mm level to the whole tissue in a single video feed



2

Instruments appear transparent in a single video feed



-> no need for separate endoscope view

Our solution's benefits

Single video view - No need for surgeons to switch between various cameras and displays

- Improves occupational ergonomics of surgeons
- Improved perception of target organs and sensitive surrounding tissues
- Reduces operation errors and time spent in various operations
- Shortens operation time for the tissues -> enables faster healing
- Reduces surgical errors and adverse effects

