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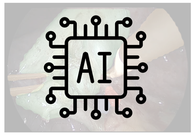
Development and Testing of EndoShare: an Application to Process and Deidentify Endoscopic Videos

SAGES 2025

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OBJECTIVE



Surgical Data Science (SDS)



Video-based Assessment (VBA)

Rapidly growing fields

Growing need to acquire **DATA** that is **HIPPA** and **GDPR** compliant

Radiology data
Clinical data
Surgical videos

REDCap

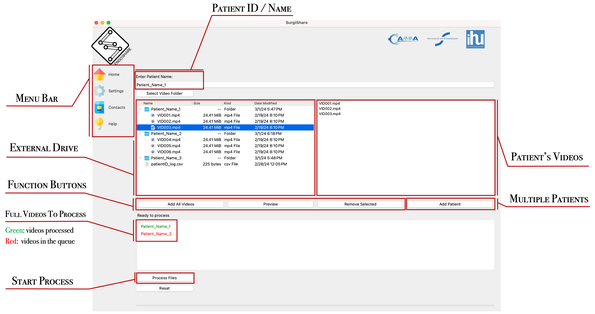
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AIM

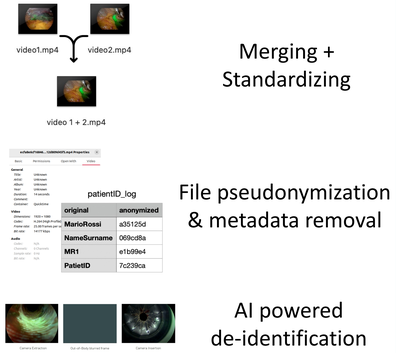
Develop and evaluate ***EndoShare***, an application that enables clinicians to share laparoscopic videos efficiently and securely, ensuring usability, workflow integration, and trust in data handling.

DESCRIPTION OF SOFTWARE AND ITS USE

1. Intuitive Interface and Minimal Setup Requirements



2. Processing Workflow



Merging + Standardizing

File pseudonymization & metadata removal

AI powered de-identification

3. Features

TWO PROCESSING MODES:

- **Fast mode**: rapid processing on standard laptops and desktops
- **Advanced mode**: users requiring additional customization or working with high-performance systems

SETUP AND UTILIZATION:

Users only need to plug in external memory with videos collected from the endoscopic/laparoscopic tower, open the app, set up patient videos, and initiate processing; multiple patients can be set up directly

4. Tests

Technical Assessment



MacOS Laptop

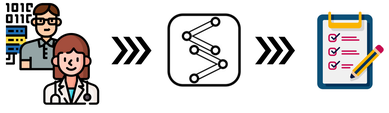


Windows Average Desktop



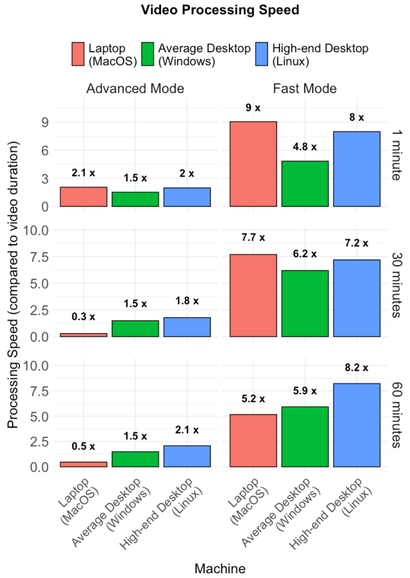
Linux High-End Desktop

User Study



RESULTS

1. Technical Assessment



2. User Study

	4 Computer Scientists	4 Clinicians
User Friendliness ($p < 0.001$)	4.03 / 5.00	4.68 / 5.00
General Experience	4.25 / 5.00	5.00 / 5.00
Contribution to Video Sharing	8.25 / 10.00	9.50 / 10.00

CONCLUSIONS

EndoShare addresses a critical need in surgical video sharing by offering a solution:

- **IRB-compliant**
- **User-friendly**
- **Streamlining video processing**
- **Maintaining patients' privacy**

Future Development

- Public release for free
- Advanced video analytics
- Semi-automated anatomical segmentation
- Integration with cloud-based storage systems

Enhance **collaboration** and **innovation** in surgical research and education

REFERENCES

Lena Maier-Hein, et al. "Surgical data science – from concepts toward clinical translation". Medical Image Analysis, 2022

P. Mascagni, N. Padoy "OR black box and surgical control tower: Recording and streaming data and analytics to improve surgical care". J. Visc. Surg., 2021

CONTACT INFORMATION

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Feel free to reach out to discuss further and try the application!