

**A DEEP LEARNING FRAMEWORK FOR DETECTION AND
SEGMENTATION OF MULTIPLE ARTEFACTS
IN ENDOSCOPIC IMAGES**

Thesis submitted in partial fulfillment of the degree of

**DOCTOR OF PHILOSOPHY
IN
ELECTRONICS AND COMMUNICATION ENGINEERING**

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80_Recommendation

An end-to-end endoscopic imaging pipeline can be implemented from pre-processing to disease characterization for all possible GI diseases. Later the same can be incorporated with the endoscopic report generation system. Once the clinician pass in the endoscope, the image displayed on a monitor will be a restored image; at the same time, the AI-powered system will report the instance of every possible disease in the form of a report.

The models at every stage of the imaging pipeline can be finetuned to improve inference time. Less the inference time faster the model. Further, the complete pipeline can be incorporated into hardware where the faster and more accurate model may lead to a fully autonomous endoscopic system.