ColoVision Analysis Report

Colorectal Cancer Segmentation Analysis

Report Date:	November 23, 2025 02:49 PM
Image File:	6.png
Analysis Type:	Binary Segmentation (ONNX Model)

Risk Assessment

Risk Level:	**Medium Risk**
Polyp Coverage:	1.83%
Model Confidence:	90.0%
Detected Pixels:	1,197
Total Pixels:	65,536

Clinical Recommendations

1. Recommend a follow-up colonoscopy in 3 to 5 years to monitor for potential changes in polyp status, given the medium risk classification.

2. Advise the patient on lifestyle modifications, including a diet high in fruits, vegetables, and fiber, while reducing red and processed meat intake to potentially lower colorectal cancer risk.

3. Consider genetic counseling and testing for hereditary syndromes if there is a significant family history of colorectal cancer or polyps, to assess individual risk factors.

4. Schedule a consultation with a gastroenterologist to discuss the findings and develop a personalized surveillance plan based on the current polyp coverage and individual patient history.

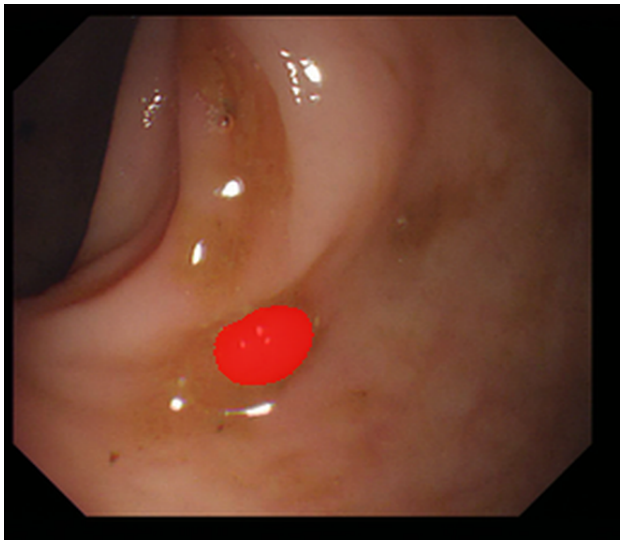
5. Ensure the patient is informed about the signs and symptoms of colorectal cancer and the importance of reporting any changes, such as rectal bleeding or unexplained weight loss, to their healthcare provider promptly.

Visual Analysis

Comparative analysis showing original colonoscopy image alongside AI segmentation results.

Original Image vs Segmentation Overlay

The left image shows the original colonoscopy view. The right image shows the AI-detected polyp regions highlighted in red, overlaid on the original image.

Original Colonoscopy Image	AI Segmentation Result
	
Unprocessed colonoscopy image	Red areas = Detected polyps

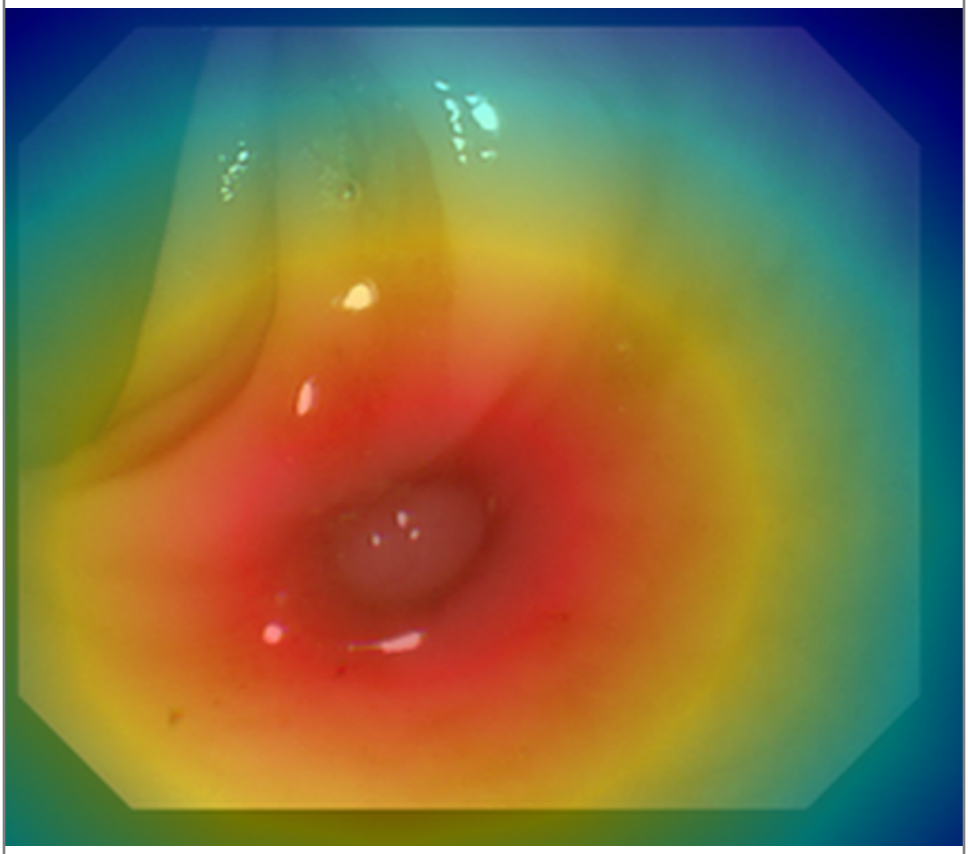
Segmentation Analysis Details

Aspect	Finding	Clinical Significance
Segmentation Mask	Binary detection of abnormal tissue regions	Identifies exact spatial location and extent of pathology
Coverage Area	1,197 pixels detected (1.83% of image)	Quantifies polyp size relative to field of view
Model Prediction	Confidence: 90.0% Risk Level: Medium Risk	Indicates reliability of automated detection

Grad-CAM Attention Heatmap

Gradient-weighted Class Activation Mapping (Grad-CAM) visualization showing where the neural network focused its attention. Red areas show high-attention polyp regions. Green areas indicate normal tissue where the model determined no pathology is present.

Model Attention Visualization



Red: Detected polyp regions (high confidence) | **Green:** Normal tissue (low risk)

Visualization Element	Interpretation	Medical Relevance
Red Overlay	Areas where the model detected polyp features	Primary regions requiring clinical examination
Green Overlay	Areas classified as normal healthy tissue	Regions with low pathology probability
Color Intensity	Indicates model confidence in its predictions	Stronger colors suggest higher certainty

Summary & Key Insights

Parameter	Value	Status
Polyp Coverage	1.83%	Medium
Total Pixels Analyzed	65,536	Complete
Abnormal Pixels	1,197	Detected
Model Confidence	90.0%	High
Risk Classification	Medium Risk	Attention

Model Information

Model Type	UNet with EfficientNet-B0 Backbone
Task	Binary Segmentation (Polyp Detection)
Format	ONNX Optimized
Input Size	256×256 pixels (RGB)
Output	Binary mask with probability scores

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