ColoVision Analysis Report

Colorectal Cancer Segmentation Analysis

Report Date:	November 23, 2025 05:16 PM
Image File:	4.png
Analysis Type:	Binary Segmentation (ONNX Model)

Risk Assessment

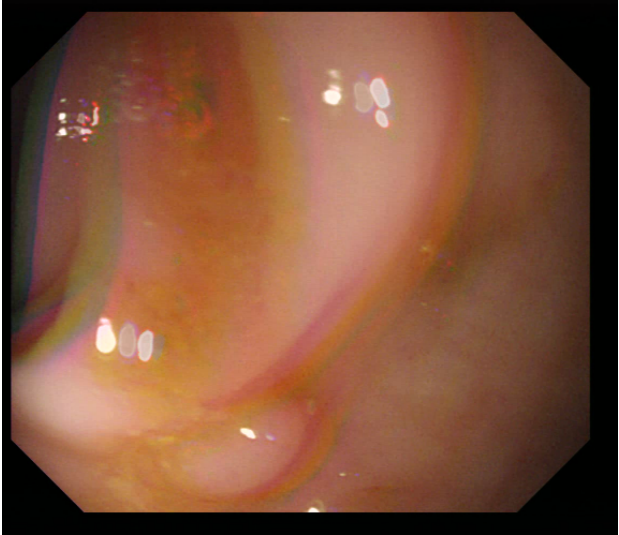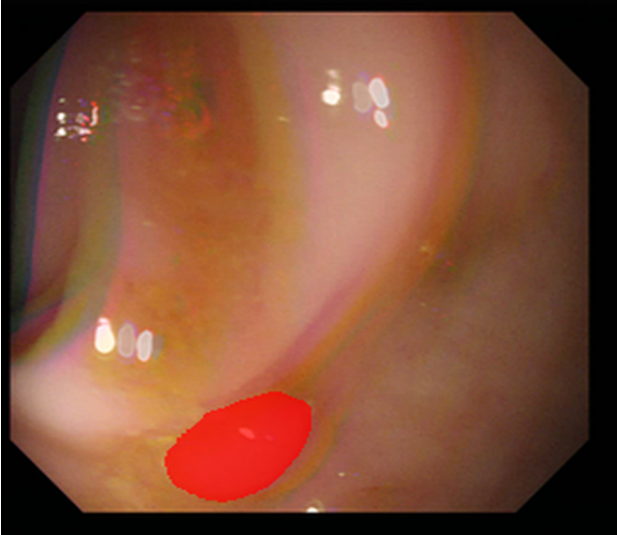|	
Risk Level:	**High Risk**
Polyp Coverage:	3.36%
Model Confidence:	90.0%
Detected Pixels:	2,203
Total Pixels:	65,536

Clinical Recommendations

1. Refer the patient for a colonoscopy within the next 3 months to assess and possibly resect the identified polyps due to high-risk findings.

2. Consider obtaining a biopsy of the polyps during the colonoscopy to evaluate for dysplasia or malignancy.

3. Schedule follow-up surveillance colonoscopy in 3 years, regardless of the biopsy results, due to the polyp coverage exceeding 3%.

4. Advise the patient on lifestyle modifications and the importance of regular screening, emphasizing a comprehensive family history assessment for hereditary colorectal cancer syndromes.

5. Document the findings and recommendations in the patient's medical record, ensuring interdisciplinary communication with the primary care provider for ongoing management.

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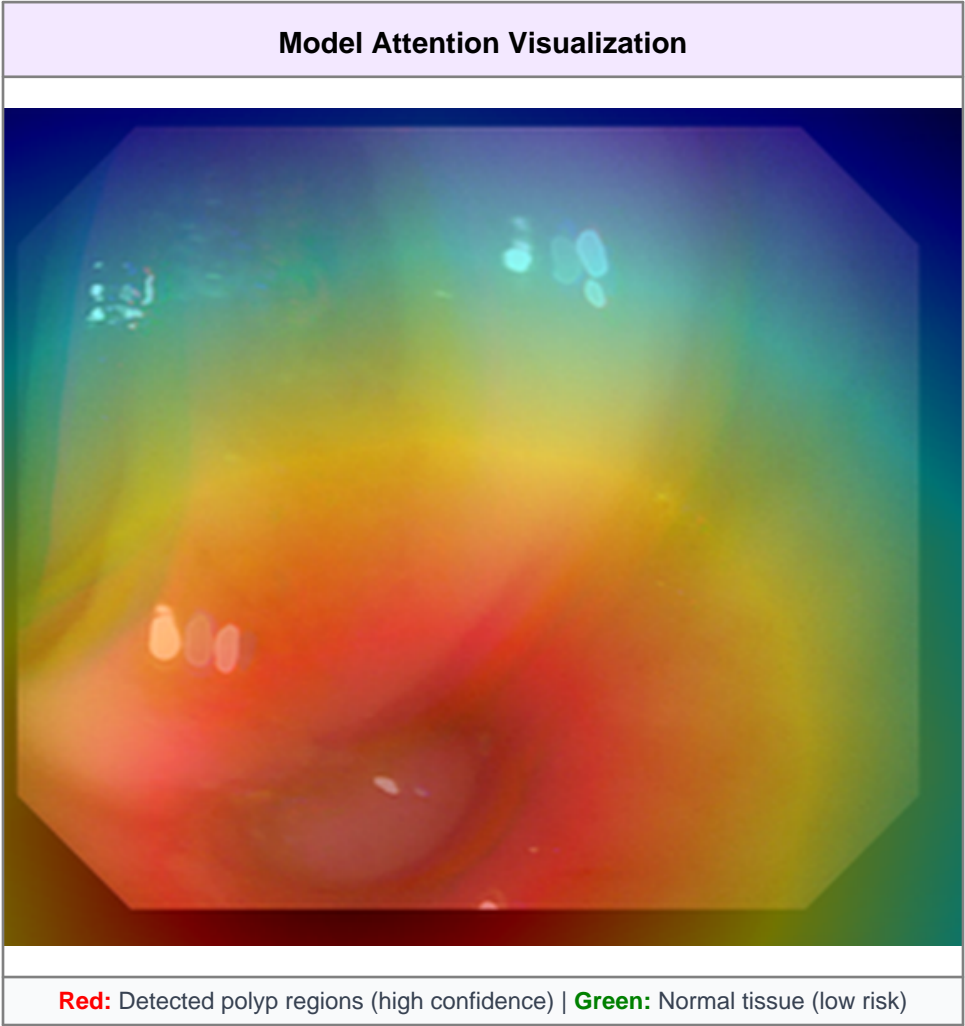
Original Colonoscopy Image	AI Segmentation Result
Unprocessed colonoscopy image	Red areas = Detected polyps

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	2,203 pixels detected (3.36% of image)	Quantifies polyp size relative to field of view
Model Prediction	Confidence: 90.0% Risk Level: High 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	3.36%	High
Total Pixels Analyzed	65,536	Complete
Abnormal Pixels	2,203	Detected
Model Confidence	90.0%	High
Risk Classification	High Risk	Critical

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