VisionAI — Doctor Report

VisionAI

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Patient Metadata

Patient ID	Patient_328
Full Name	Jenifer Rao
Age	61
Gender	Male
BP	142/72
Systolic	142.0
Diastolic	72.0
Glucose Level	110.0
BMI	32.7
Smoking	Yes
Duration of Diabetes (years)	18.0
Hypertension	No
Family History	Yes
Phone	000-000-0000
Address	Remote

Image Visualizations
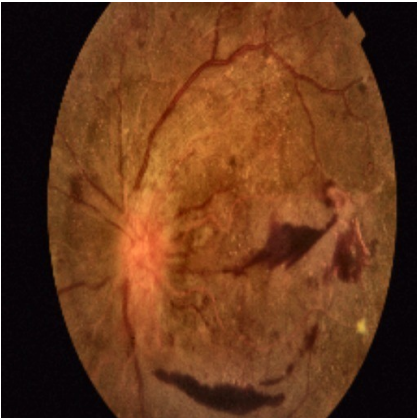
ORIGINAL
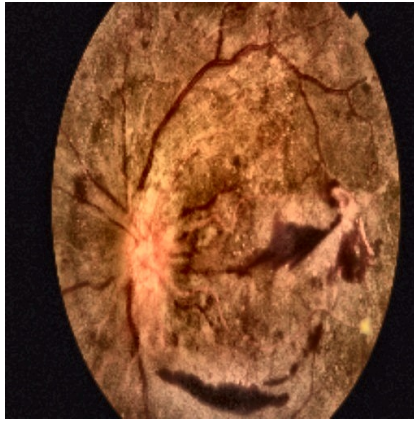
PREPROCESSED

GRADCAM

LIME

SHAP-like Feature Importance (VisionAI)
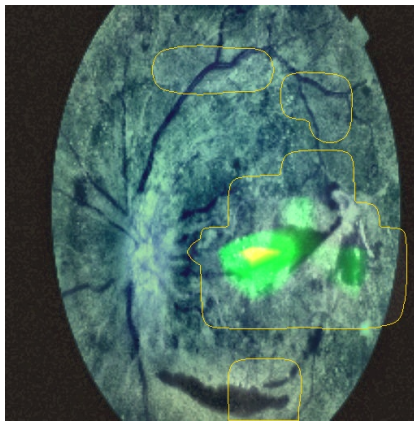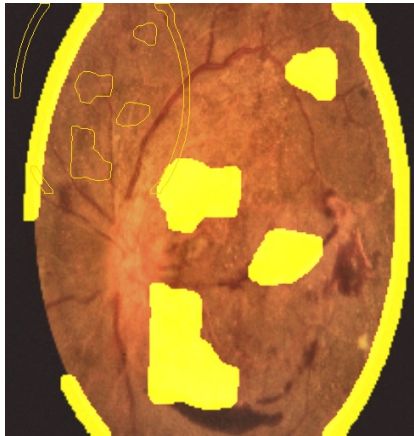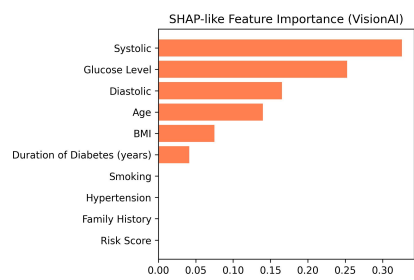
SHAP
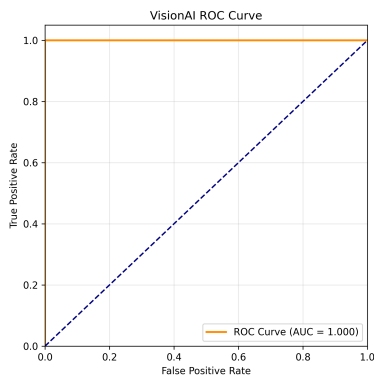
ROC Curve

Lesion Breakdown

Feature	Percentage (%)
Total lesion coverage	26.51
Exudates	0.42
Hemorrhages	1.44
Cotton wool spots	5.37
Microaneurysms	0.0

Model Confidence: 96.0%

Composite Risk Score: 52.59 (see report for formula)

Clinical Summary

Model prediction: **PDR** • Confidence: **96.0%** • Risk score: **52.59**.

Findings (image & explainability)

Explainability overlays (heatmaps and perturbation maps) were inspected to localize lesion clusters and to validate the model's attention. The heatmaps show concentrated signal near the macular region and temporal quadrants consistent with detected lesions below.

Lesion Quantification

Refer to the Lesion Breakdown table for per-feature estimated coverage in the supplied image.

Clinical interpretation and suggested actions

1) If hemorrhagic burden or macular involvement is suspected, consider urgent retinal specialist review, optical coherence tomography (OCT), and fluorescein angiography as appropriate. 2) Optimize systemic control: glycemic management (target HbA1c per treating endocrinologist), blood pressure control, and lipid management. 3) Counsel on smoking cessation and provide timely follow-up (6–12 months or earlier if symptoms worsen). 4) Consider referral for intravitreal therapy if neovascularisation or macular edema is confirmed.

Notes on model provenance

The prediction arises from an ensemble of image backbones and tabular classifiers. Explainability maps (Grad-CAM, LIME, SHAP) were used to cross-validate visual and clinical features.

Model Evaluation Metrics

Metric	Value
Accuracy	0.985
F1-score	0.982
AUC/ROC	0.993

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