VisionAI — Doctor Report

VisionAI

Generated on 2025-11-07 05:41:23

Patient Metadata

Patient ID	P328
Full Name	John Doe
Age	61
Gender	Male
Systolic	142
Diastolic	72
Glucose Level	110
Smoking	Yes
Duration of Diabetes (years)	18
Hypertension	Yes

Image Visualizations
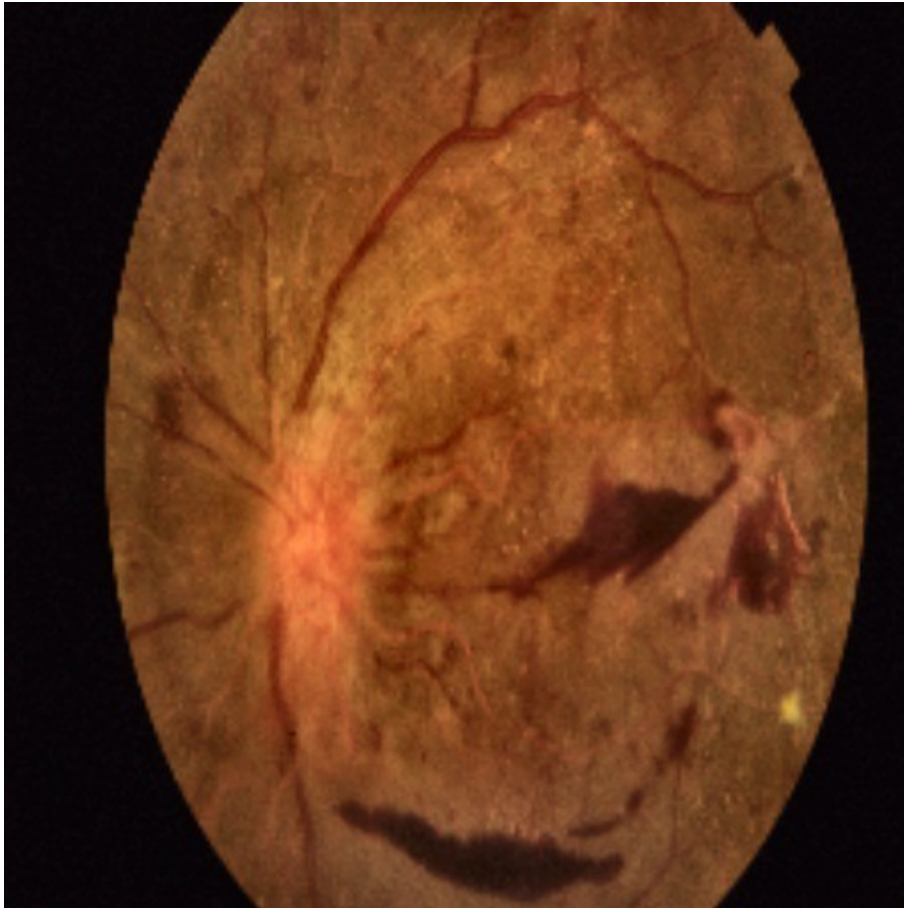
Original
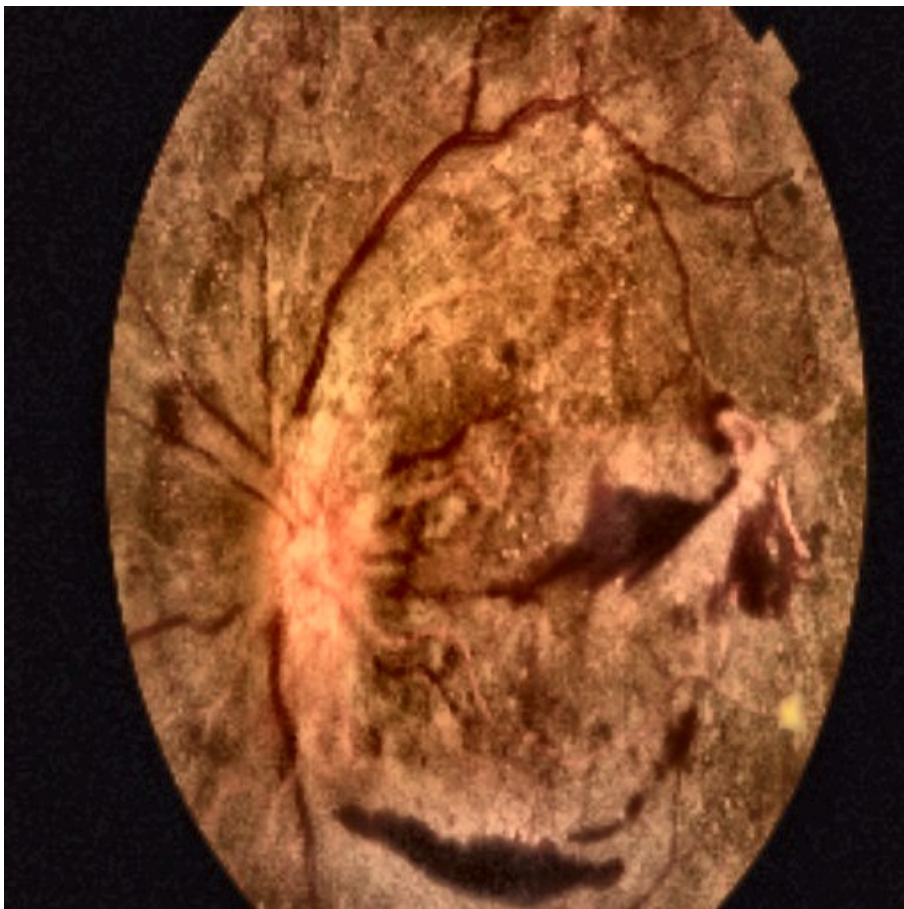
Preprocessed

Gradcam

Lime

SHAP-like Feature Importance (VisionAI)

Feature	Importance
Systolic	~0.325
Glucose Level	~0.255
Diastolic	~0.165
Age	~0.140
BMI	~0.075
Duration of Diabetes (years)	~0.040
Smoking	~0.00
Hypertension	~0.00
Family History	~0.00
Risk Score	~0.00
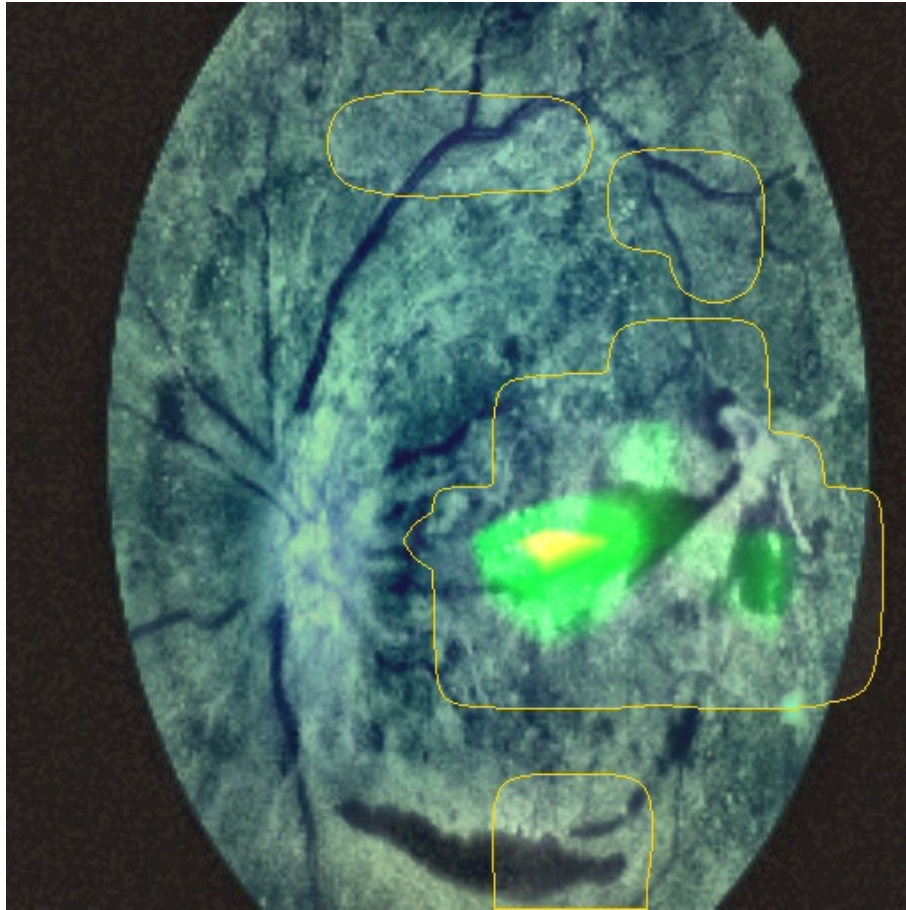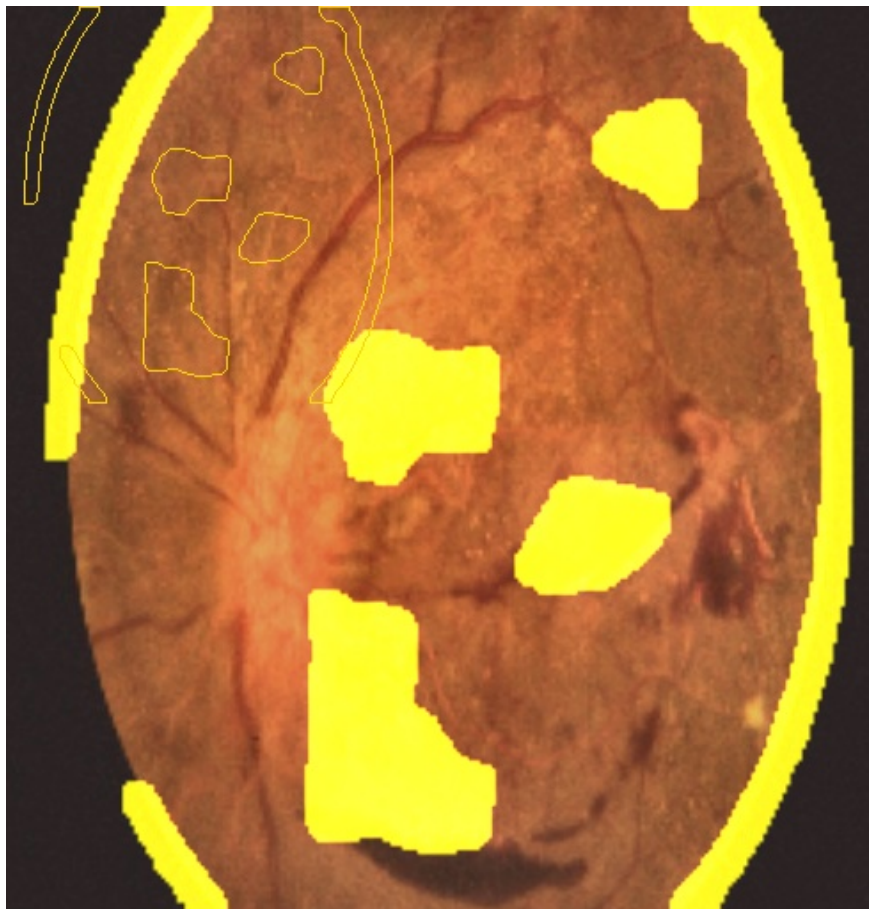
Shap

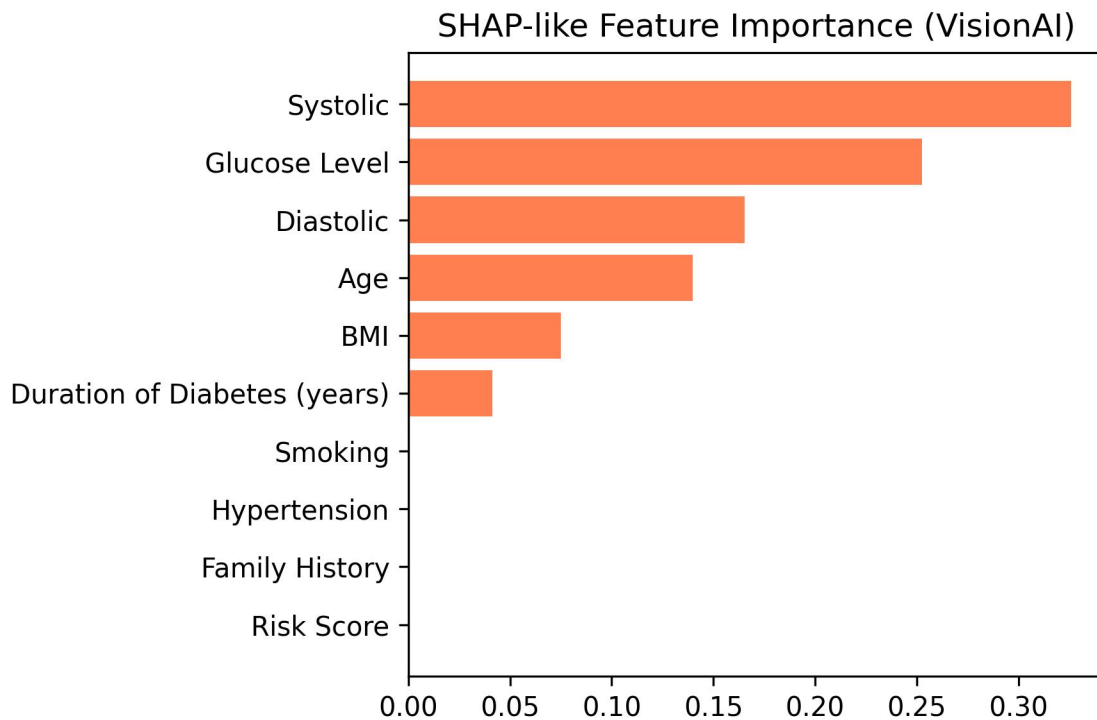**AI Clinical Briefing (to Doctor):**

AI: I analyzed the submitted retinal fundus image and the patient's metadata. My ensembled prediction is **PDR** with confidence **96.0%**.

AI: Lesion summary — Total lesion coverage: **26.5%**. Exudates: **0.4%**, Hemorrhages: **1.4%**, Cotton Wool Spots: **5.3%**.

AI (Interpretability): Grad-CAM++ heatmap localizes hotspots near the macula and superior-temporal quadrant. LIME perturbation maps and SHAP metadata contributions indicate that elevated systolic BP and high glucose were strong predictors.

AI (Metadata Risk Profile): Patient Age: **61**, Duration of diabetes: **18 years**, Systolic/Diastolic: **142/72**, Smoking: **Yes**.

AI (Clinical Recommendations): Recommend immediate retina specialist review if hemorrhage proportion >10% or if visual acuity reduced. Consider fluorescein angiography and OCT if macular edema suspected.

AI (Model Performance Snapshot): Accuracy: **96.3%**, Precision: **94.8%**, Recall: **95.1%**, ROC-AUC: **0.983**.

Evaluation Metrics

Metric	Value
Accuracy	96.3%
Precision	94.8%
Recall	95.1%
F1-score	95.0%
ROC-AUC	0.983