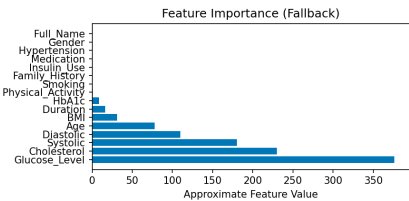
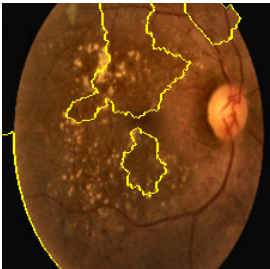
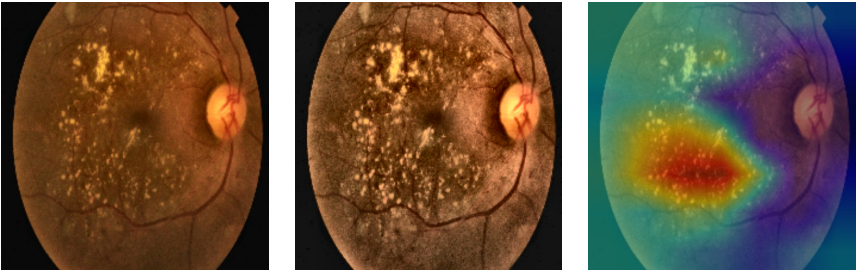


Stage: SEVERE

Metadata Snapshot

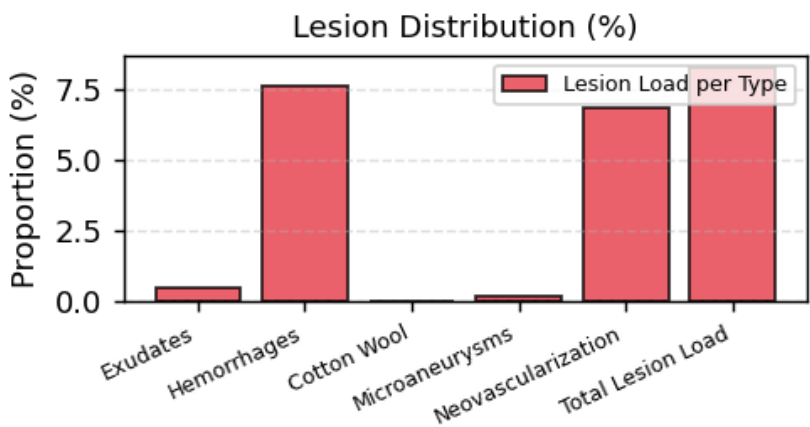
| | |
|--------------------|---------|
| Name: | solomon |
| Age: | 78 |
| Gender: | Female |
| Systolic (mmHg): | 180 |
| Diastolic (mmHg): | 110 |
| BMI: | 30.8 |
| Glucose: | 376 |
| HbA1c: | 8.6 |
| Cholesterol: | 230 |
| Smoking: | Yes |
| Hypertension: | Yes |
| Diabetes Duration: | 16 |



Clinical Insights

- Clinical Report — Ophthalmologist
- Patient: Name: solomon, Age: 78, BMI: 30.8
- Predicted stage: SEVERE
- Model confidence: 83.6%
- Risk score: 95.42%
- Findings (automated lesion quantification):
 - - Microaneurysms: 16.10%
 - - Exudates: 49.30%
 - - Hemorrhages: 7.65%

- - Cotton Wool: 0.00%
- - Neovascularization: 6.86%
- - Total Lesion Load: 8.31%
- Clinical interpretation:
 - Extensive hemorrhages, venous beading and/or cotton-wool spots consistent with severe NPDR. Urgent referral advised.
- Model & Explainability:
 - - Multi-model fusion: CNN ensemble (EfficientNet, ResNet50, ViT) + metadata models (RF, XGBoost, stacked ensemble).
 - - Explainability outputs available: GradCAM++, LIME, SHAP — review heatmaps and overlay masks.
- Performance metrics:
 - - Accuracy: 0.947
 - - F1-score: 0.938
 - - AUC/ROC: 0.971
- Suggested clinical action items:
 - 1. Correlate with slit-lamp exam and fundus exam.
 - 2. If macular edema suspected, obtain OCT imaging.
 - 3. For suspected PDR, arrange urgent retina referral for potential PRP/anti-VEGF.
 - 4. Document lesion masks if available for audit.



Model Metrics

- Accuracy: 0.947
- F1-score: 0.938
- AUC/ROC: 0.971