

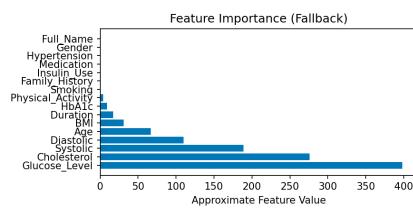
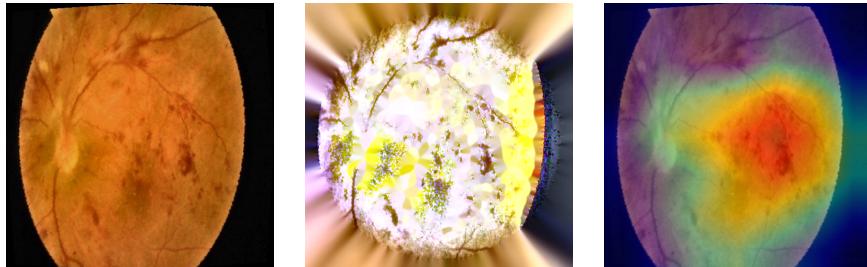
# Clinical Report

Generated: 2025-11-12 14:28:49

**Stage: SEVERE**

## Metadata Snapshot

Name: solomon  
Age: 67  
Gender: Male  
Systolic (mmHg): 189  
Diastolic (mmHg): 110  
BMI: 30.8  
Glucose: 398  
HbA1c: 8.9  
Cholesterol: 276  
Smoking: Yes  
Hypertension: Yes  
Diabetes Duration: 17



## Summary

- Clinical Report — Ophthalmologist
- Patient: Name: solomon, Age: 67, BMI: 30.8
- Predicted stage: SEVERE
- Model confidence: 32.7%

# Summary

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- Risk score: 69.33%
- Findings (automated lesion quantification):
  - Microaneurysms: 6.09%
  - Exudates: 30.00%
  - Hemorrhages: 1.62%
  - Cotton Wool: 30.00%
  - Neovascularization: 30.00%
  - Total Lesion Load: 67.71%
- 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.

