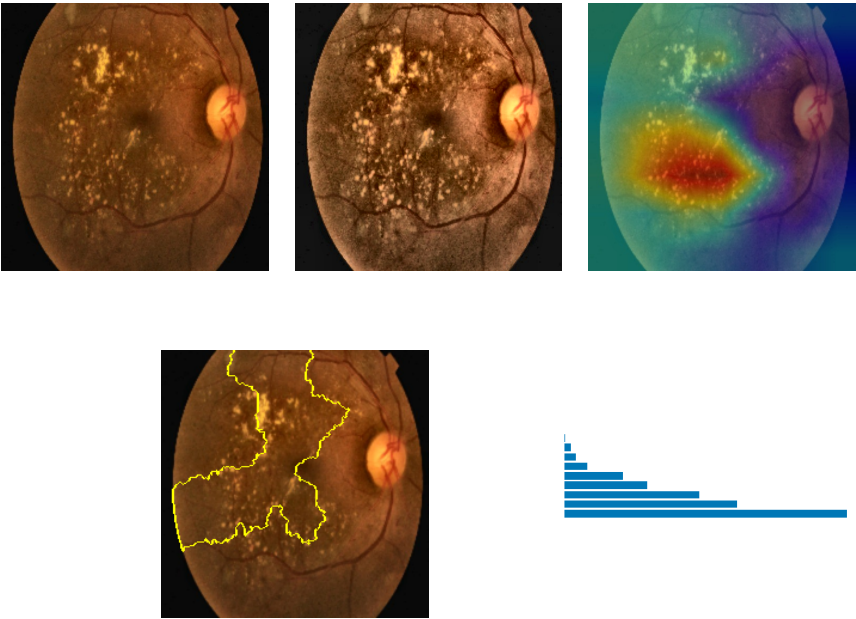




Stage: SEVERE

Metadata Snapshot

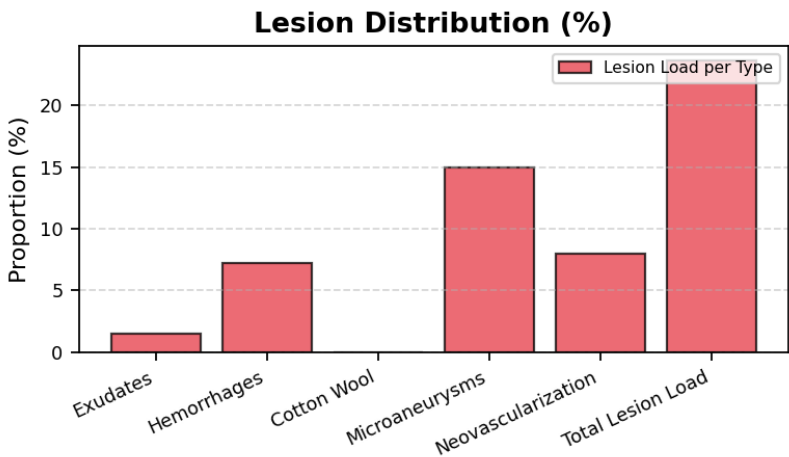
Name: solomon
Age: 78
Gender: Female
Systolic (mmHg): 180
Diastolic (mmHg): 110
BMI: 30.8
Glucose: 376
HbA1c: 8.6
Cholesterol: 230
Smoking: Yes
Hypertension: Yes
Diabetes Duration: 16



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: 14.99%
  - - Exudates: 1.44%
  - - Hemorrhages: 7.17%
  - - Cotton Wool: 0.00%
  - - Neovascularization: 7.99%
  - - Total Lesion Load: 23.61%
- 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