Stage: PDR

ಮೆಟಾಡೇಟಾ ಸಂಗ್ರಹ

ಹೆಸರು: Sebastian

ವಯಸ್ಸು: 89

ಲಿಂಗ: Male

ಸಿಸ್ಟಾಲಿಕ್ (mmHg): 180

ಡಯಾಸ್ಟಾಲಿಕ್ (mmHg): 110

BMI: 30

ಗ್ಲೂಕೋಸ್: 398
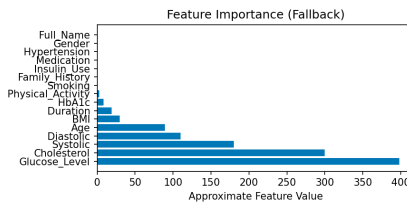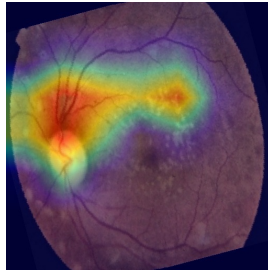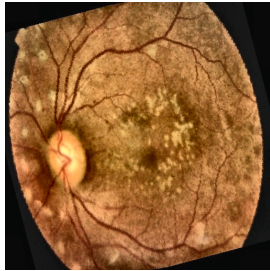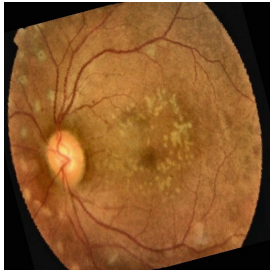
HbA1c: 8.7

ಕೊಲೆಸ್ಟ್ರಾಲ್: 300

ಧೂಮಪಾನ: Yes

ರಕ್ತದೊತ್ತಡ: Yes

ಮಧುಮೇಹ ಅವಧಿ: 19

Feature Importance (Fallback)

ಸಾರಾಂಶ

- Research Notes
- UID: 09376c11
- Predicted stage: PDR
- Confidence: 85.74%

- Risk score: 96.05%
- Model stack & inference
- - CNN ensemble: EfficientNet, ResNet50, ViT
- - Metadata models: Random Forest, XGBoost, Stacked ensemble
- - Fusion method: weighted averaging with risk calibration
- - Inference device: CPU
- Explainability & lesion quantification:
- - Microaneurysms: 20.31%
- - Exudates: 21.52%
- - Hemorrhages: 2.56%
- - Cotton Wool: 0.00%
- - Neovascularization: 30.00%
- - Total Lesion Load: 44.39%
- SHAP / feature importance: check SHAP plots for systemic features (HbA1c, BMI, BP).
- Probability vectors:
- - CNN: [0.009146252647042274, 0.007499577943235636, 0.005429462064057589, 0.004857202991843224, 0.9730675220489502]
- - ML : [0.21136369507961952, 0.20268235745827803, 0.19376393050773666, 0.19047474400645248, 0.20171527294791336]
- - Fused: [0.039478868418132744, 0.03677699431733438, 0.033679631824038825, 0.032699833652201006, 0.857364671788293]
- Performance metrics:
- - Accuracy: 0.947
- - F1-score: 0.938
- - AUC/ROC: 0.971
- Research recommendations:
- 1. Validate lesion segmentation / cotton-wool detection against annotated masks (report dice/IoU).
- 2. Add cotton-wool-spot specific augmentation and mask labels if false negatives observed.
- 3. Measure GradCAM heatmap overlap (IoU) with human heatmaps for explainability calibration.

- 4. Consider temporal models for progressive DR tracking and early-warning signals.

Lesion Distribution (%)

Model Stage Probabilities

Model Metrics

Model Comparison (Accuracy %)