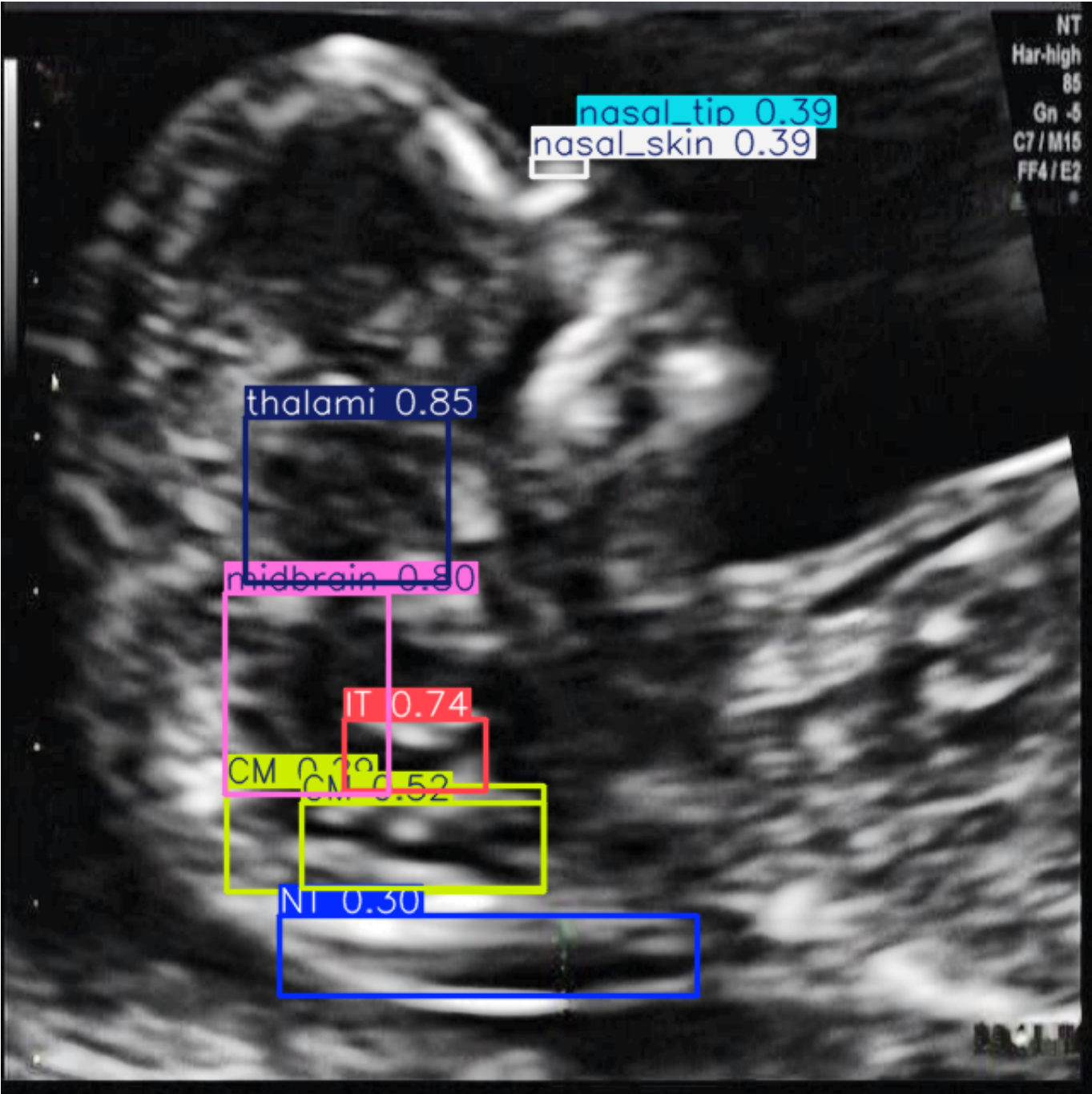


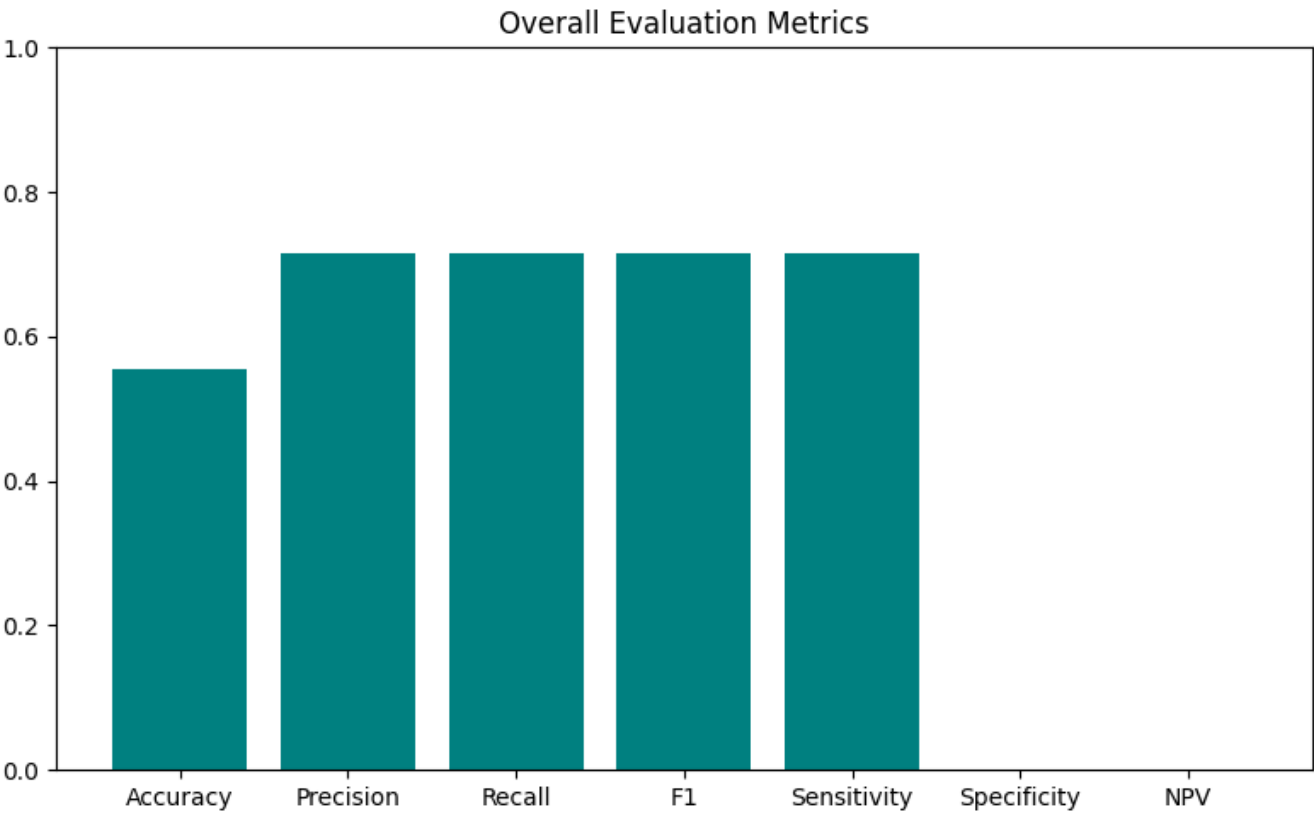
Fetal Ultrasound AI Evaluation Report

Generated on: 2025-06-18 02:03:45

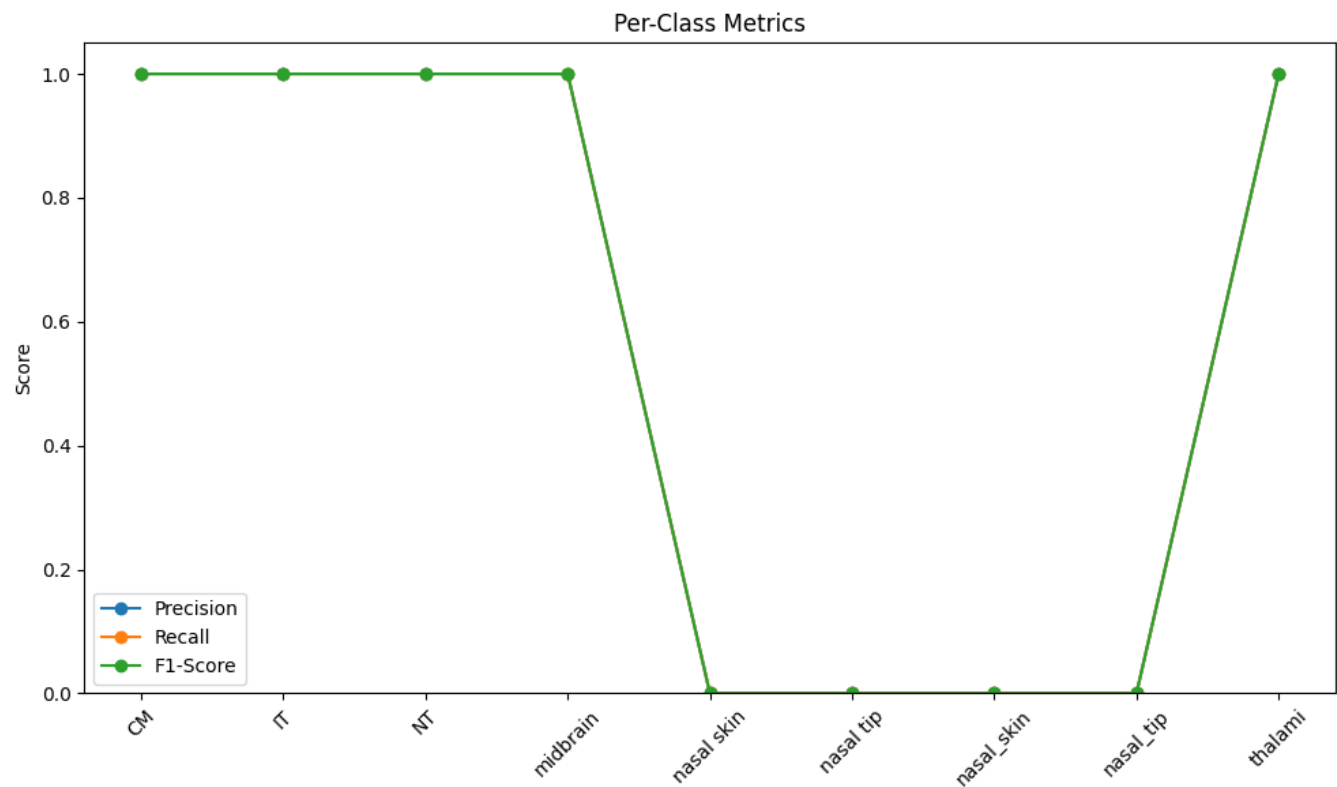
Detected Biomarkers



Overall Evaluation Metrics



Per-Class Performance

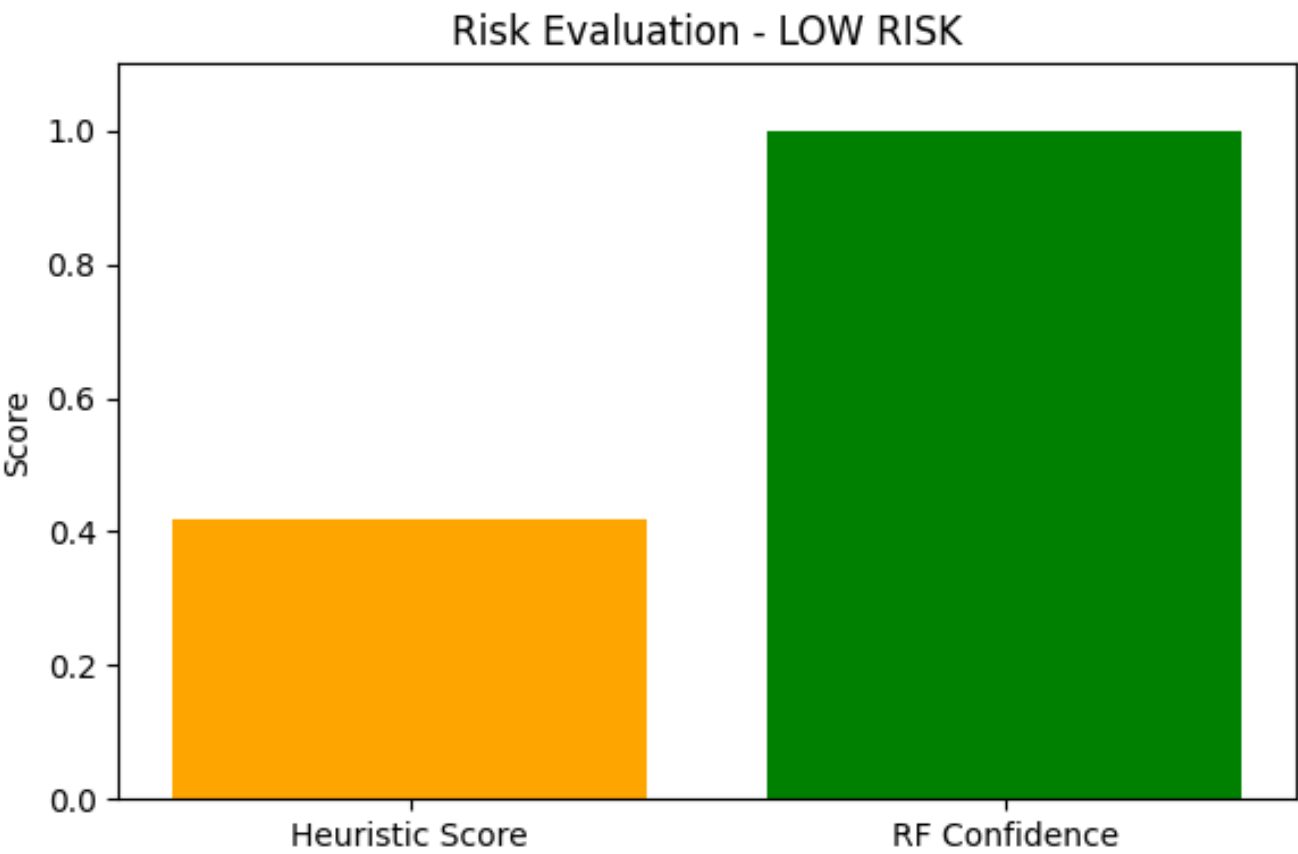


Heuristic vs ML-Based Risk Assessment

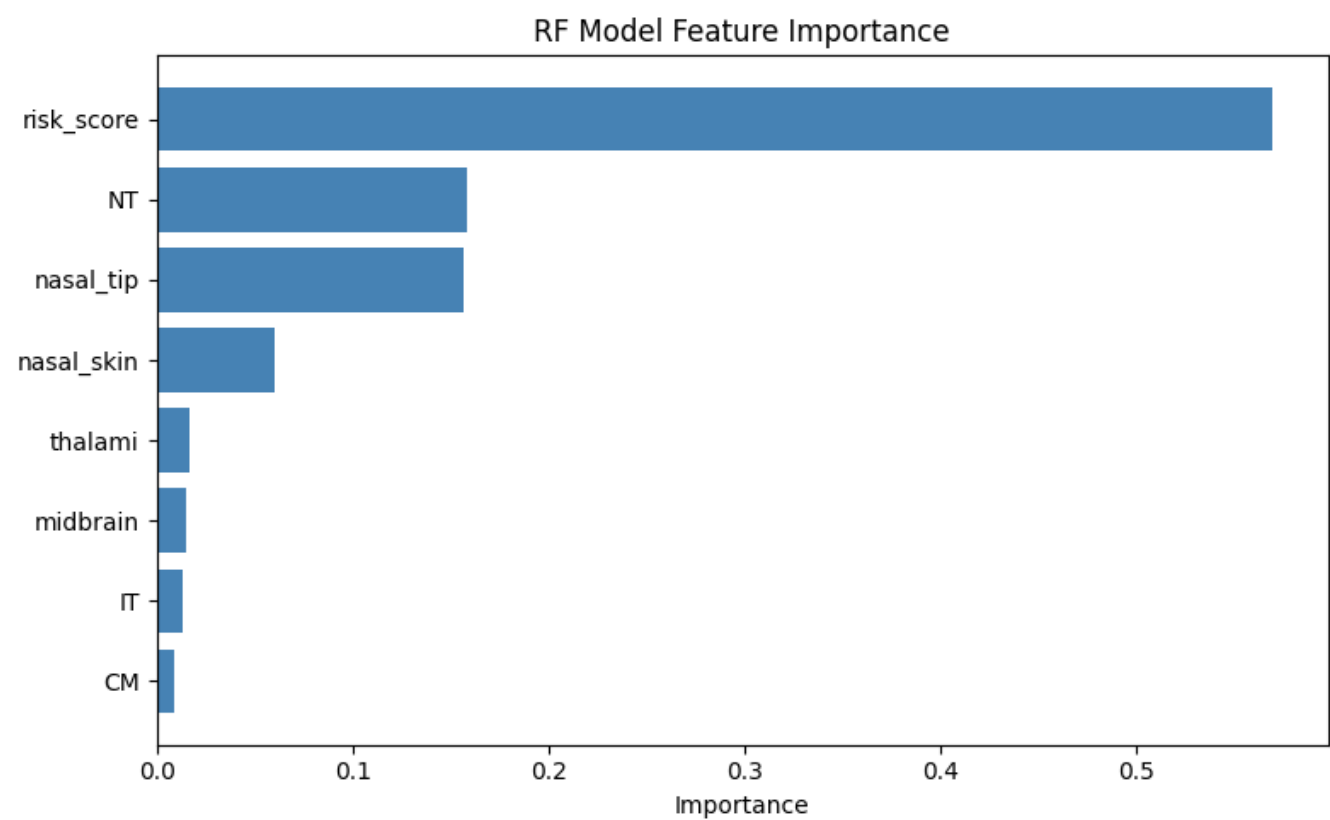
Risk Score: 0.42

Heuristic Label:	LOW RISK
RF Label:	LOW RISK
RF Confidence:	N/A

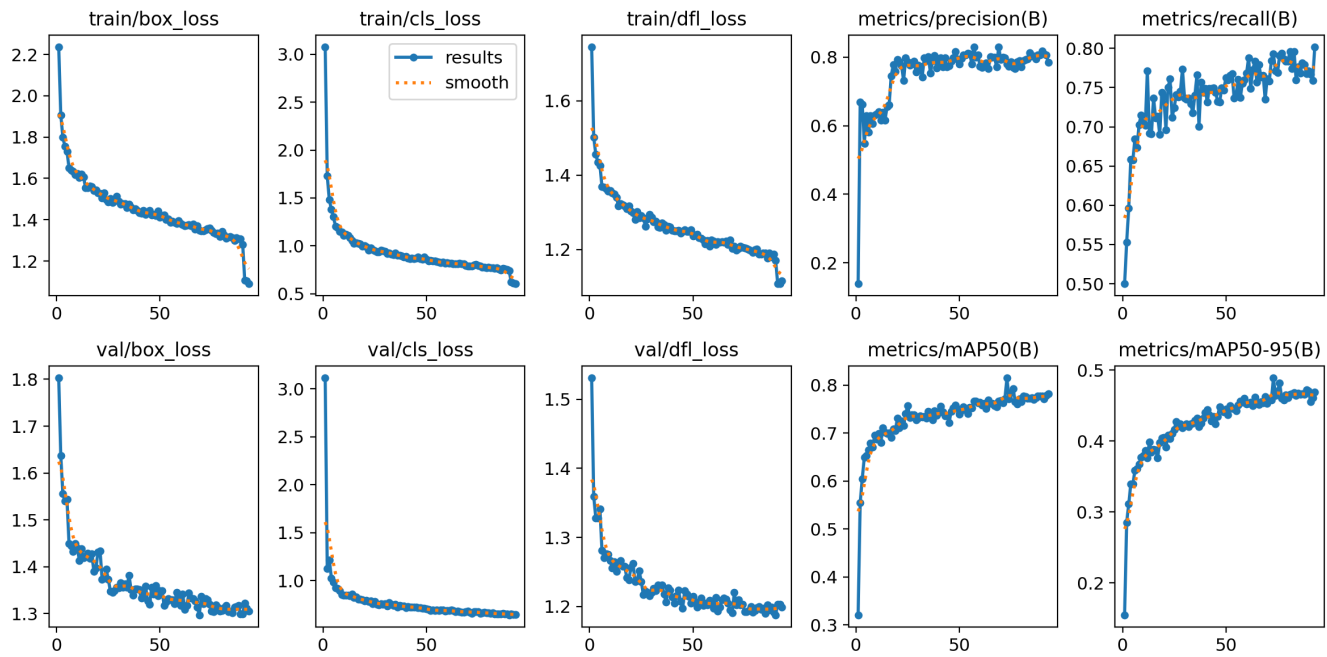
Comparison: Heuristic Risk vs ML Confidence



Random Forest Feature Importance



YOLOv8 Training Performance



- box_loss: Bounding box regression error (lower is better)
- cls_loss: Class misclassification loss (lower is better)
- dfl_loss: Distribution focal loss (lower is better)
- val_*: Same metrics on validation set
- precision(B): Correct positive detections (higher is better)
- recall(B): Actual positive coverage (higher is better)
- mAP50 / mAP50-95: Mean average precision at multiple thresholds (higher is better)

Summary:

- This report integrates object detection (YOLOv8) with biomarker risk analysis.
- Two approaches for Down Syndrome risk scoring are used:
 - (a) Heuristic threshold-based rules
 - (b) ML-based Random Forest prediction
- This dual-method analysis provides both interpretability and predictive power.
- Charts and model graphs support transparency and future clinical validation.