

Week 10-12

Progress

Tymo van Rijn

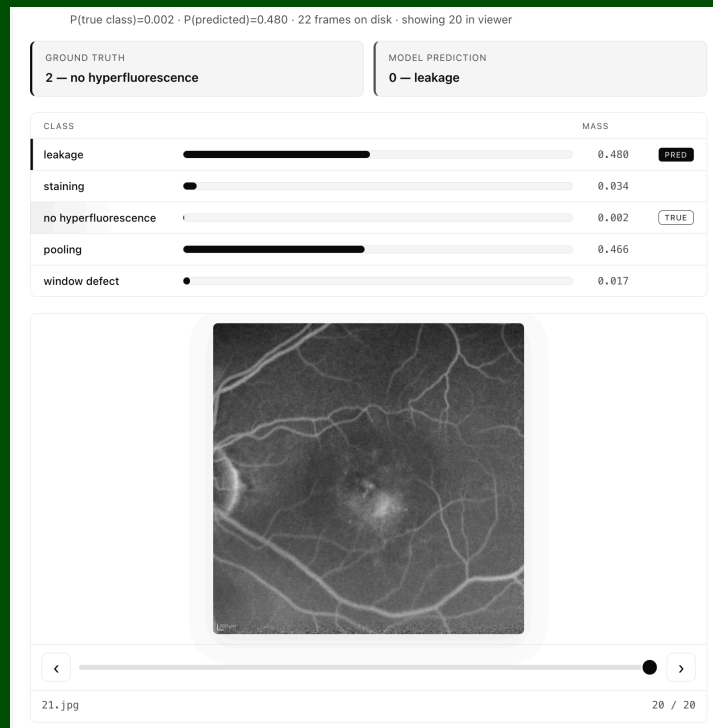
Points from last meeting

1. Check why classification fails
2. Try a new OCR on AngioReport
3. Make everything more based on time
4. Check how many phases there are in the exams
5. Use XGBoost to make classification based on n_frames & timing of frames

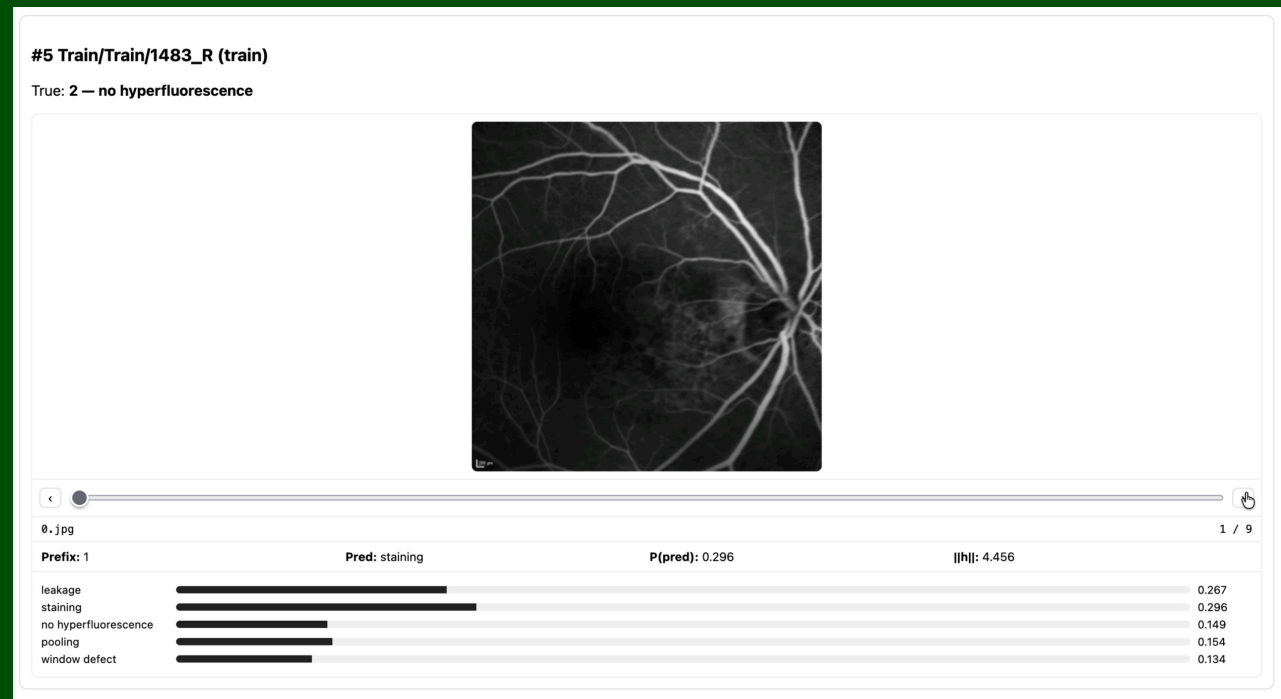
Classification

Why does it fail?

Fail Viewer v1



Fail Viewer v2



Classification

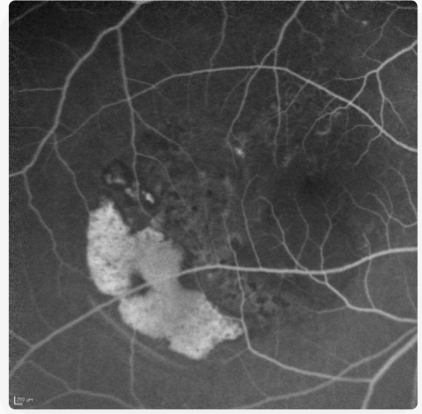
Why does it fail?

#1 Train/Train/1466_L (validation)
True: 2 — no hyperfluorescence

GROUND TRUTH
2 — no hyperfluorescence

MODEL PREDICTION
1 — staining

CLASS	MASS
leakage	0.077
staining	0.531 PRED
no hyperfluorescence	0.009 TRUE
pooling	0.184
window defect	0.200



11. jpg
Prefix: 12

- leakage
- staining
- no hyperfluorescence
- pooling
- window defect

14. jpg 15 / 15

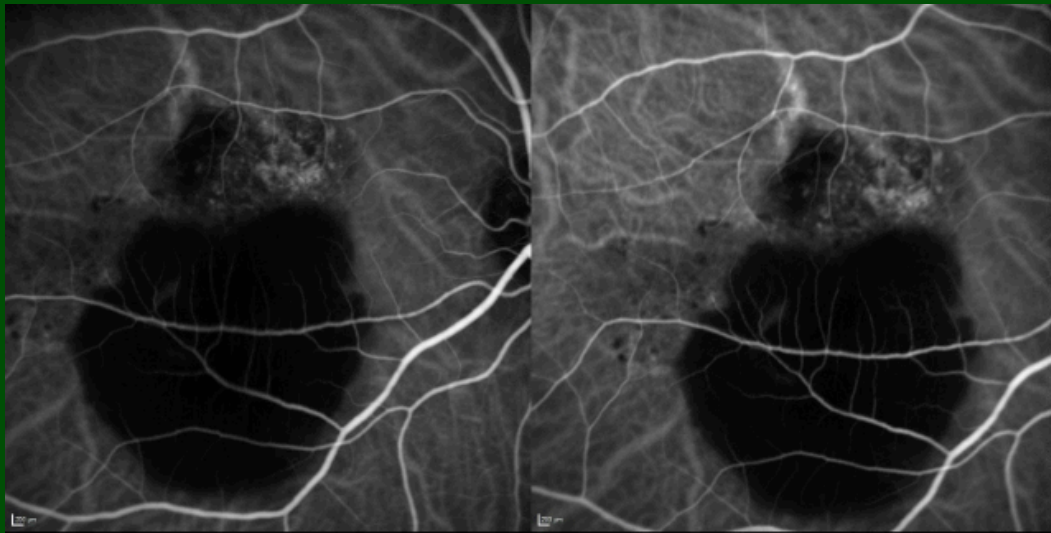
12 / 12

- 0.263
- 0.054
- 0.002
- 0.641
- 0.040

OCR

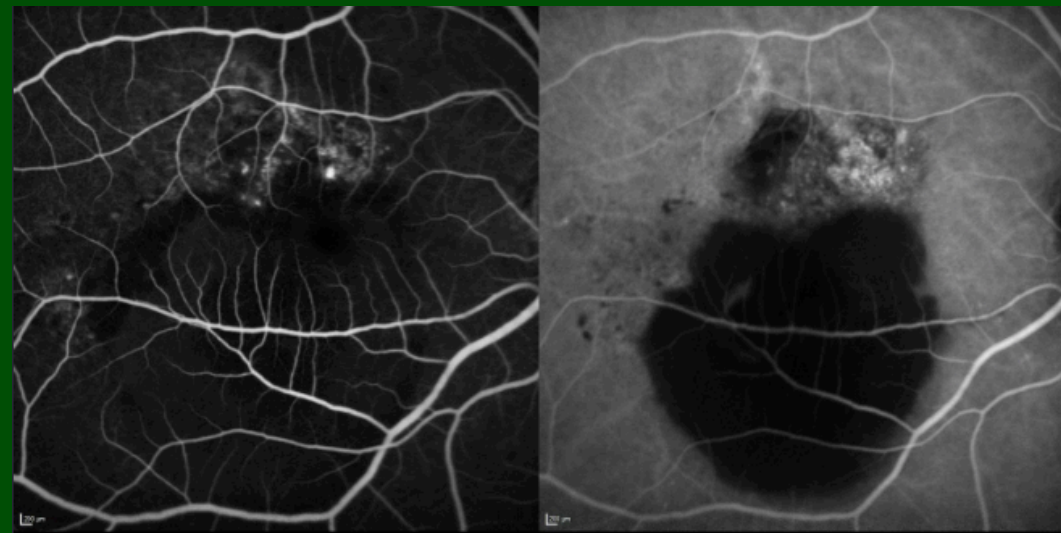
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OCR



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HEIDELBERG
engineering



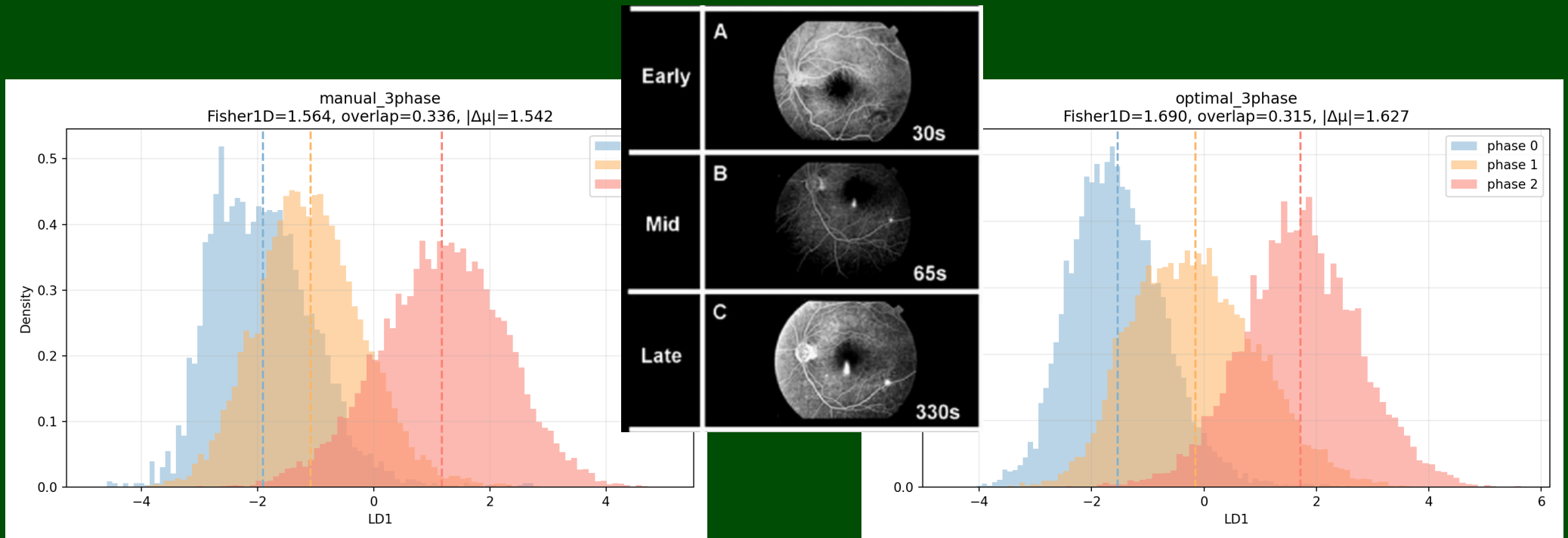
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HEIDELBERG
engineering

OCR

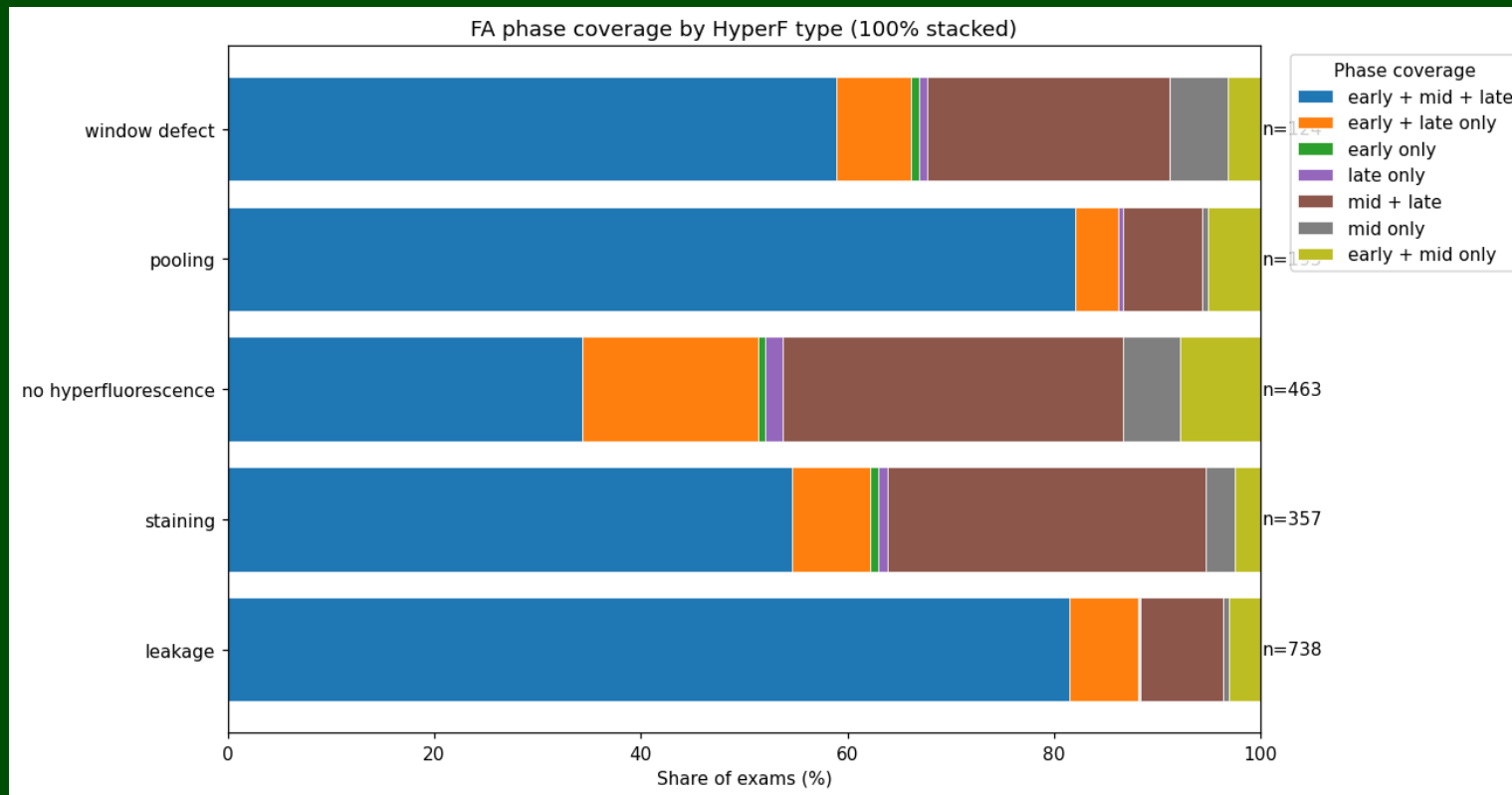
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Time-Based Make phases

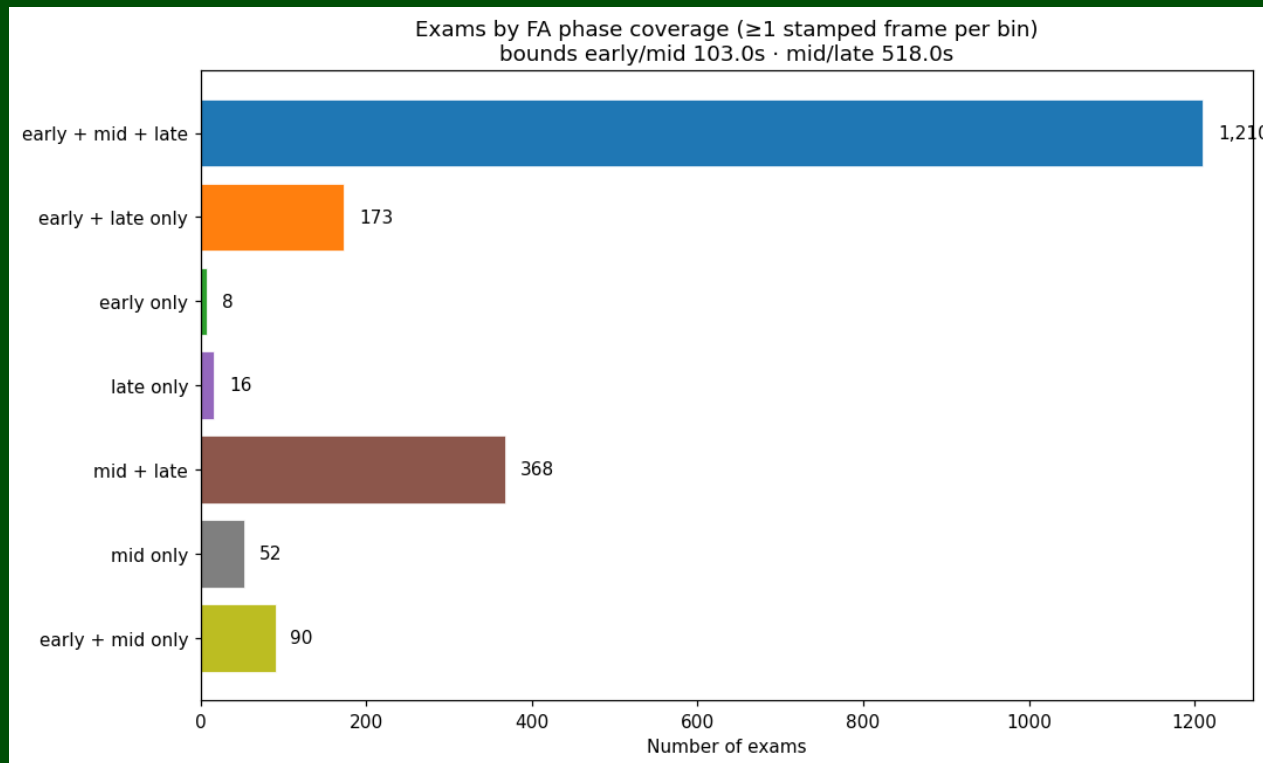


0 s - 103 s - 518 s

Time-Based Make phases



Time-Based Make phases



Time-Based

Use phases

AUC

Strategy	None	Leakage	Pooling	Staining	Window Defect	HyperF Type
Early	0.84 ± 0.02	0.64 ± 0.03	0.60 ± 0.03	0.51 ± 0.03	0.54 ± 0.04	0.63 ± 0.03
Mid	0.88 ± 0.03	0.71 ± 0.02	0.60 ± 0.07	0.57 ± 0.04	0.60 ± 0.07	0.67 ± 0.02
Late	0.88 ± 0.03	0.74 ± 0.02	0.64 ± 0.07	0.63 ± 0.04	0.58 ± 0.07	0.69 ± 0.01

Time-Based Use phases

FFT Results (using only last frame)

Metric	None	Leakage	Pooling	Staining	Window Defect	HyperF Type
AUC	0.95 ± 0.01	0.87 ± 0.02	0.76 ± 0.02	0.75 ± 0.03	0.78 ± 0.04	0.82 ± 0.02
F1	0.81 ± 0.02	0.75 ± 0.02	0.33 ± 0.02	0.44 ± 0.04	0.29 ± 0.05	0.48 ± 0.02

FFT GRU Results

Metric	None	Leakage	Pooling	Staining	Window Defect	HyperF Type
AUC	0.97 ± 0.01	0.88 ± 0.01	0.77 ± 0.02	0.81 ± 0.01	0.83 ± 0.01	0.85 ± 0.00
F1	0.86 ± 0.01	0.71 ± 0.04	0.45 ± 0.08	0.35 ± 0.07	0.35 ± 0.09	0.52 ± 0.04

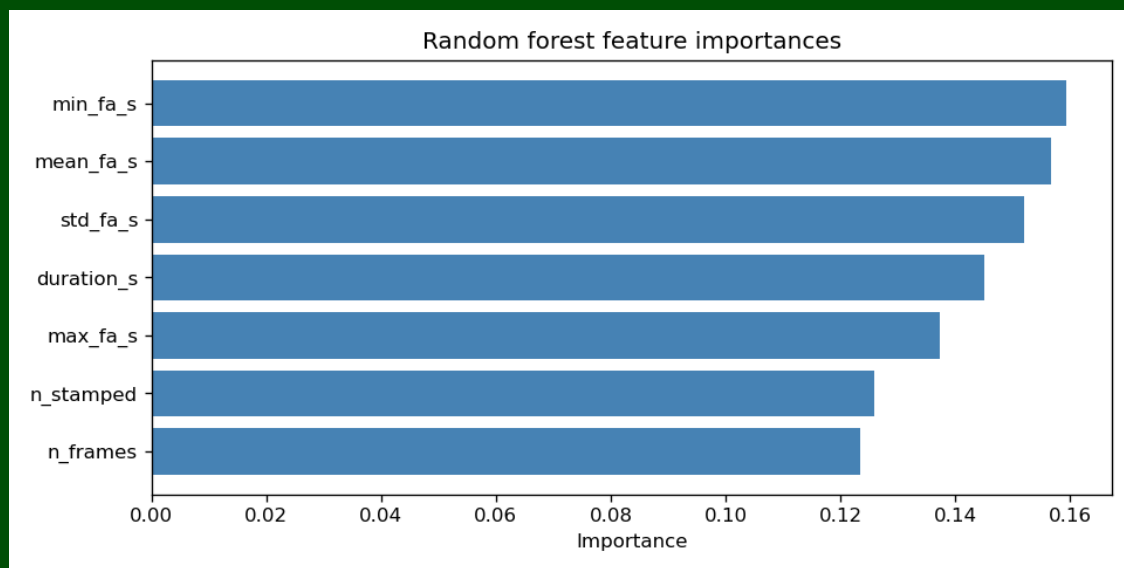
Tree Model

Random Forest

- n_frames
- mean_fa_s
- std_fa_s
- min_fa_s
- max_fa_s
- duration_s

Tree Model

Random Forest



RF Results

Metric	None	Leakage	Staining	Pooling	Window Defect	HyperF Type
AUC	0.85	<u>0.79</u>	0.59	<u>0.70</u>	<u>0.67</u>	0.72
F1	0.63	<u>0.69</u>	0.20	0.2	<u>0.31</u>	<u>0.41</u>

GRU Results

Metric	None	Leakage	Staining	Pooling	Window Defect	HyperF Type
AUC	<u>0.91</u>	0.75	<u>0.68</u>	0.65	0.64	<u>0.74</u>
F1	<u>0.92</u>	0.67	<u>0.30</u>	<u>0.33</u>	0.2	<u>0.41</u>

*Green on green not the best move *Forgot confidence interval

Poster Visualizations

The image shows a design tool interface for creating a poster. The main canvas displays a poster layout with three sections: Introduction, OCR Pipeline, and GRU Architecture. The Introduction section compares 'Static Baseline vs. Multi-Frame Approach', showing that 'Static Grading (Baseline)' has an AUC of ~0.82, while 'Dynamic Grading' has an AUC of ~0.85. The OCR Pipeline section shows a flow from 'Raw FA frames with missing time metadata' to 'Time labeled frames' via an 'OCR' engine. The GRU Architecture section shows a flow from 'Time labeled frames' to 'VIT RETFound Green' (with 'Early Em.' and 'Late Em.' outputs) and then to a 'GRU Network' (with 'None', 'Pooling', 'Staining', 'Win. Def.', and 'Leakage' outputs).

SAIMI Pictures
Team project [Free](#)

Pages
Page 1
2 free pages left. See plans that offer more.

Layers
GRU Architecture
OCR Pipeline
Introduction

Introduction
Static Baseline vs. Multi-Frame Approach
X Static Grading (Baseline) Uses **ONLY** one final frame from the entire examination sequence. **AUC: ~0.82**
✓ Dynamic Grading Models disease **evolution** chronologically across multiple phases. **AUC: ~0.85**

OCR Pipeline
Raw FA frames with missing time metadata
↓
OCR: OCR engine extracts visual timestamps
↓
Time labeled frames

GRU Architecture
Time labeled frames → VIT RETFound Green (Early Em., Late Em.) → GRU Network (None, Pooling, Staining, Win. Def., Leakage)

Design Prototype 15%
Page 1E1E1E 100%
Styles +
Export +

Planning

Next steps

Week 13 / 18

SOIN Repo

Poster

Mednet

Deliverable

2.3 Examination “Advise”

	Final qualification	Explanation	Points to consider when assessing
Advise	<p>Advising on the purchase and selection of software components when developing a software system in which the cost aspect can play a minor role.</p> <p>Advising on a part of an architecture or a limited software system.</p> <p>Advising on the use of prototypes when validating the requirements. (Software #2).</p>	<p>The student can provide (very) effective advice on the results of the keywords mentioned.</p> <p>On the one hand, the advice is in line with the customer's requirements, but also shows a critical view of alternatives.</p>	<p>Choices made and substantiation thereof, completeness (for example quality aspects, security, scalability, performance, privacy), presentation of the advice.</p>