PREDICTING STROKE ETIOLOGY FROM IMAGING OF BLOOD CLOTS

SAM OLIVER - FREELANCE DATA SCIENTIST
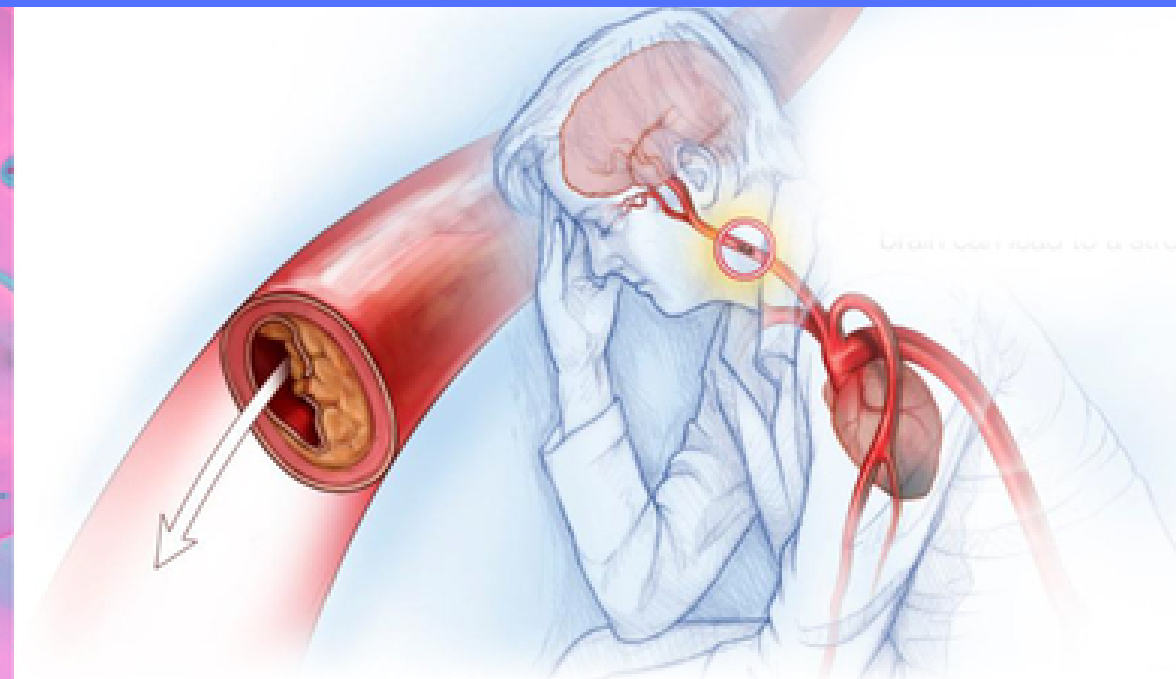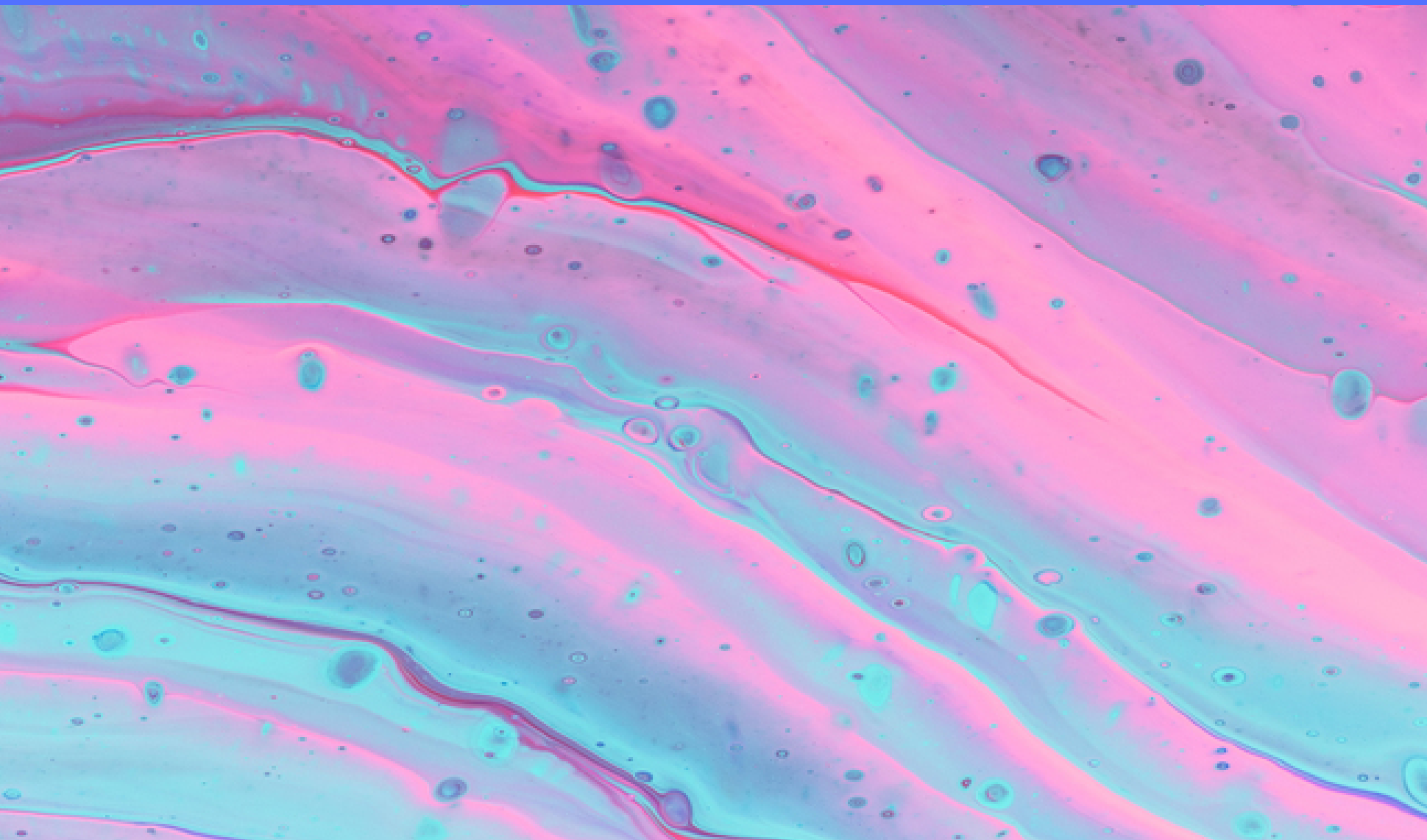
STRIP AI

STROKE THROMBOEMBOLISM REGISTRY
OF IMAGING AND PATHOLOGY
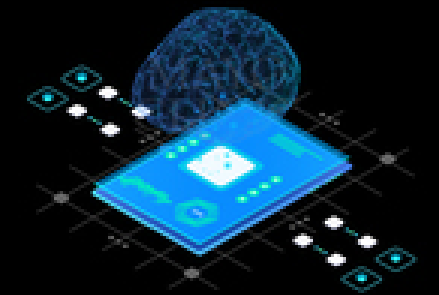
MAYO
CLINIC

- BACKGROUND
- DATA

- METHODS
- MODEL RESULTS

- CONCLUSIONS +
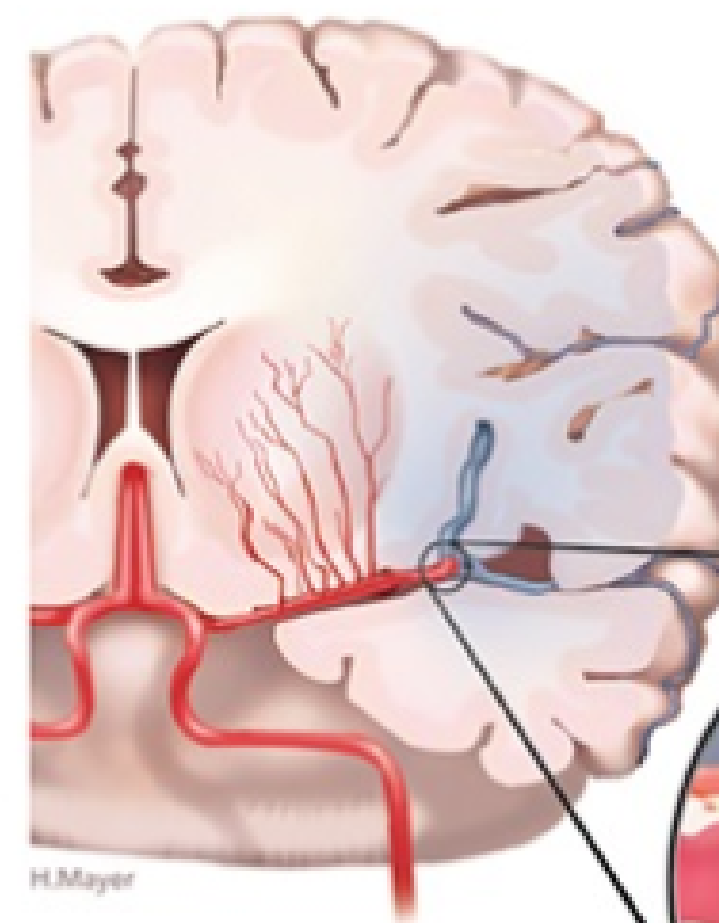 RECOMMENDATIONS
- CONTACT DETAILS

BACKGROUND
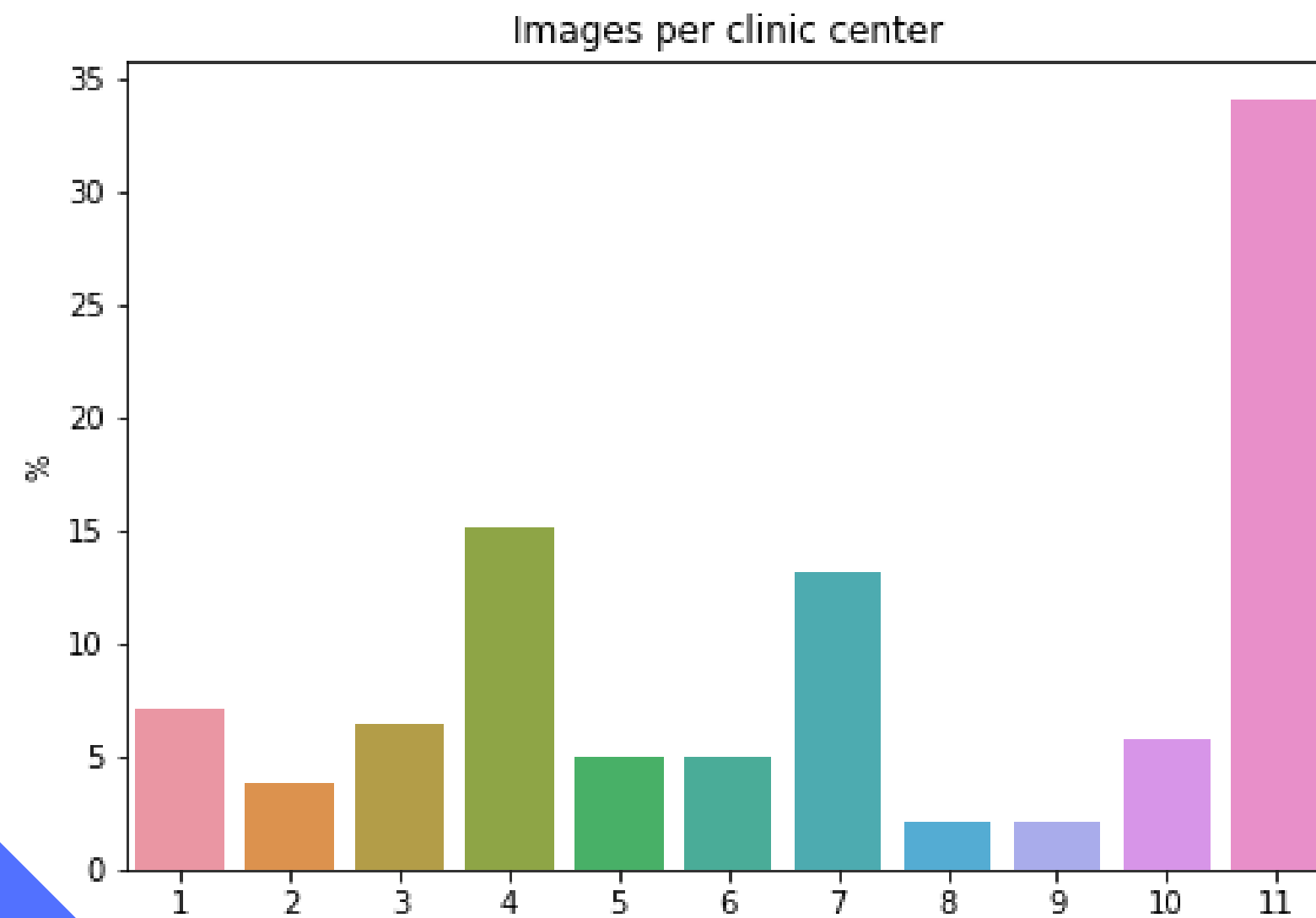
- 700K STROKES / YR IN US
- MAYO CLINIC + KAGGLE

Ischemic Stroke
Blood clot stops the flow of
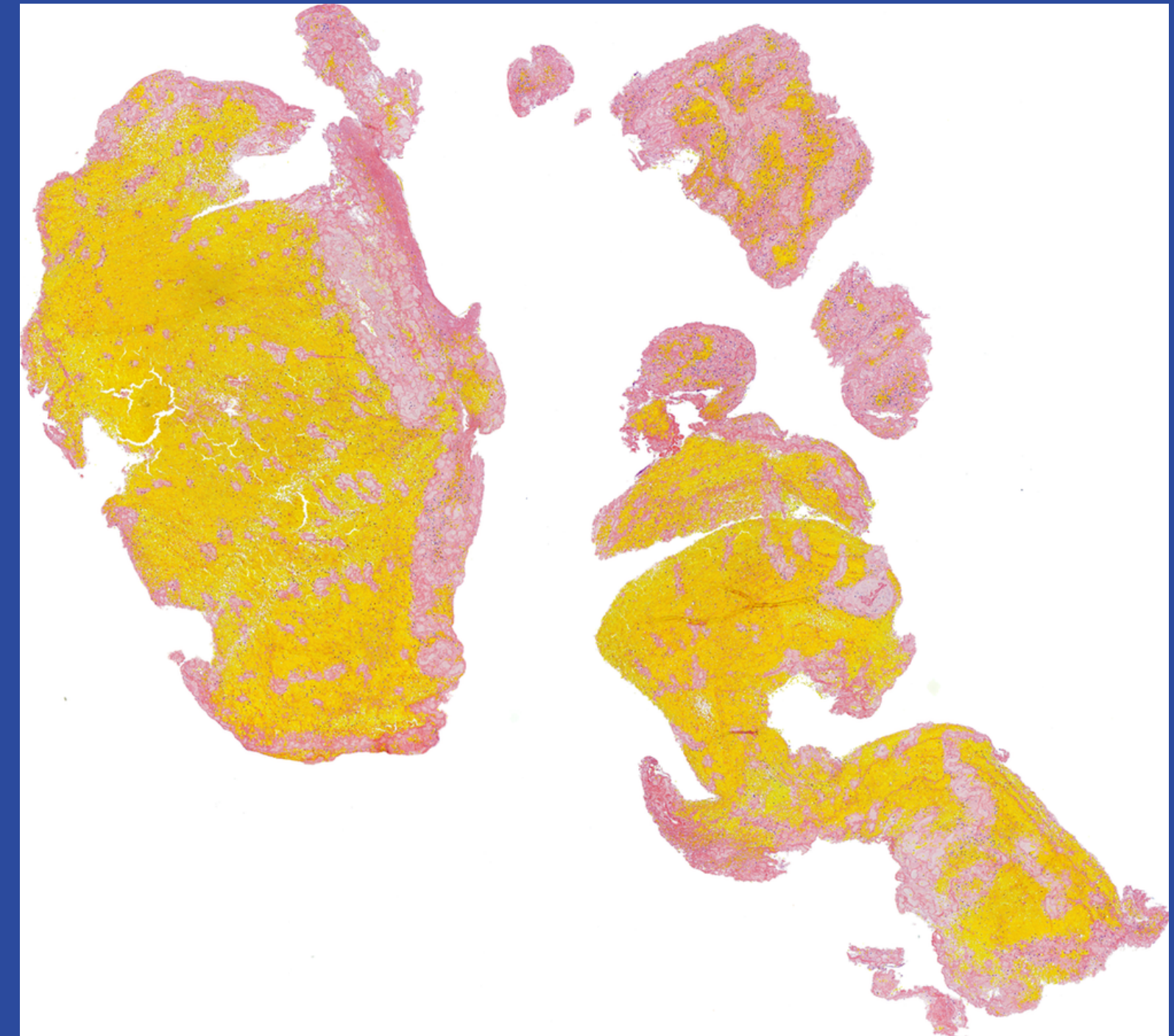blood to an area of the brain.

© Heart and Stroke Foundation of Canada

H.Mayer

DATA

1,000 WHOLE SLIDE IMAGES - 400 GB
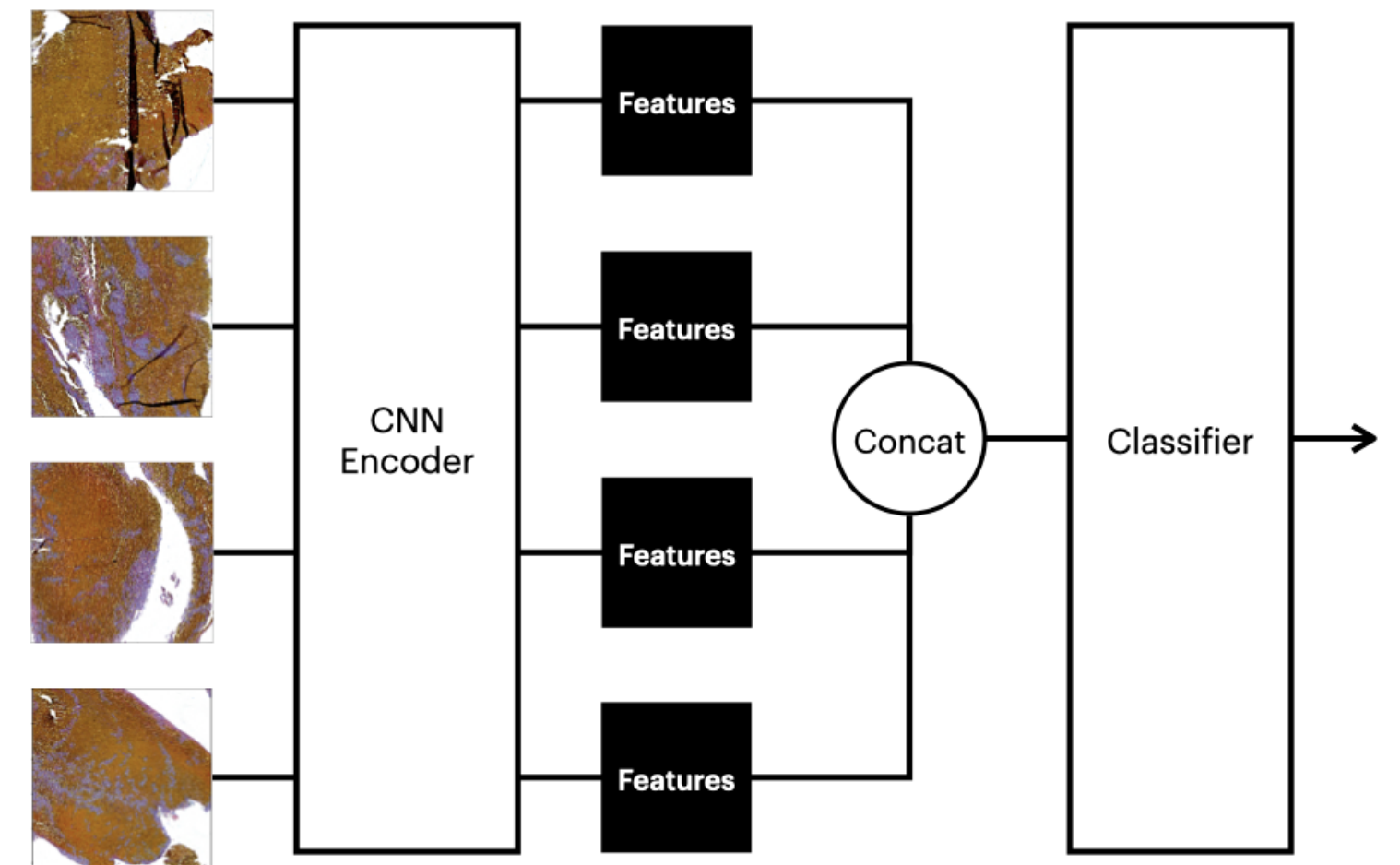

Images per clinic center

WHOLE SLIDE IMAGE OF CLOT

METHODS

- CLEAN DATASET
- HANDLE SIZE OF DATA
- MODEL THE DATA: NN & MIL
- EVALUATE & COMPARE

MIL MODELING

MODEL RESULTS

LOSS SCORES:
0.663 (BASELINE)
0.604 (BEST)

Further Recommendations

1. EXPAND COMPUTATIONAL RESOURCES

2. MORE DATA: BIOMARKERS + MASS SPECTROMETRY READINGS

3. EXPLORE OTHER SOLUTIONS: PREVENTATIVE HEALTHCARE PREDICT RISK + RECOMMEND SCREENING

CONTACT INFO

✉ samueloliver303@gmail.com

🌐 https://www.linkedin.com/in/samo
liver3/

📍 https://github.com/samoliver3