Quality checks on model trainng pipeline

Data Pipeline

Training batch iterator

Batching
Queuing
Prefetching
Caching

Target Processing for polygons

Image Enhancement

(logo removal, equalization, resize, denoising, cropping)

Target Augmentation for polygons

Image Augmentation

(random rotation, translation, zoom)

Validation batch iterator

Batching
Queuing
Prefetching
Caching

Target Processing for polygons

Image Enhancement

(logo removal, equalization, resize, denoising, cropping)

Image Files
(Dicom or Png)

Metadata

Targest (final)

Inputs (final)
- view 1
- view 2
- view 3
- view 4

Training Loop

Train Steps

Forward Pass: Compute predictions

Backward Pass: Update model weights

Prediction

Targets

Loss Fn

Optimizer

Loss

Gradients

Model

conv

conv

conv

Pixel aggregator

Dropout

View aggregator

prediction

auxiliary outputs

Validation Step

Forward Pass

Prediction

Targets

Metric Calculator

Metrics

AUC, PR-AUC, F1

Double loop

```
for epoch in range(epochs):

    for inputs, targets in training_batch_iterator:
        train_step(inputs, targets)

    for inputs, targets in validation_batch_iterator:
        val_step(inputs, targets)
```

Metadata Inspector

(summary stats)

Label Inspector

(summary stats, gap between train and val)

Input Image Inspector

(images and labels)

Heat Map Ispector

GradCam, Pixelwise logits

Latent Space Inspector

t-SNE, kNN

Prediction Inspector

highest scored negatives, lowest scored positives

Applies in training only

Model

Trainable via Backprop