

Image Classification

Diabetic Retinopathy

Diabetic Retinopathy

- Diabetes related eye disease that can lead to vision loss
- Early diagnosis and interventions can preserve vision in diabetic patients
- Mild to moderate cases typically do not have symptoms
- Detecting the disease is time-consuming and manual

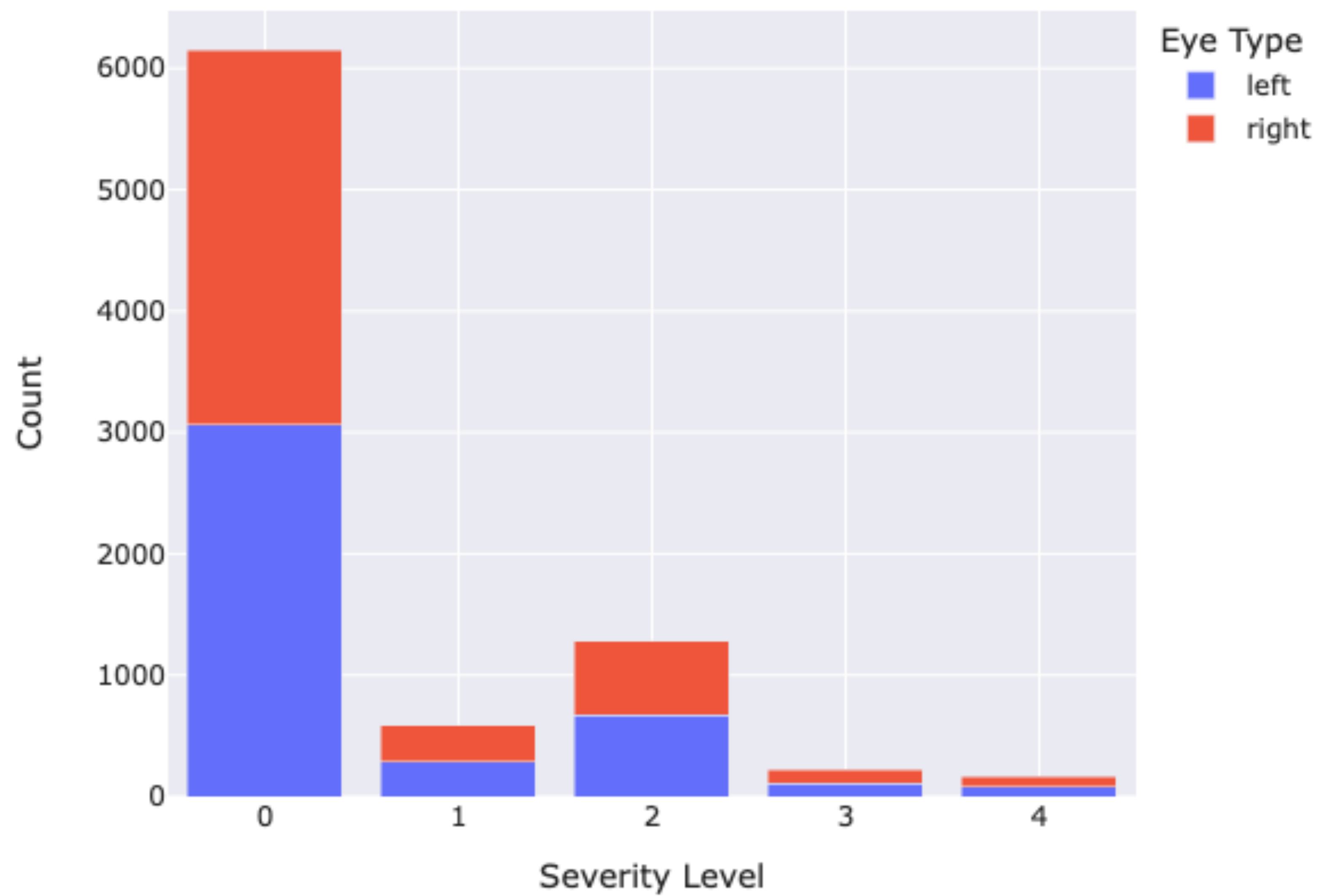
Data Science for Prevention & Impact

- Automated image classification for early detection
- Non-invasive, quick, efficient

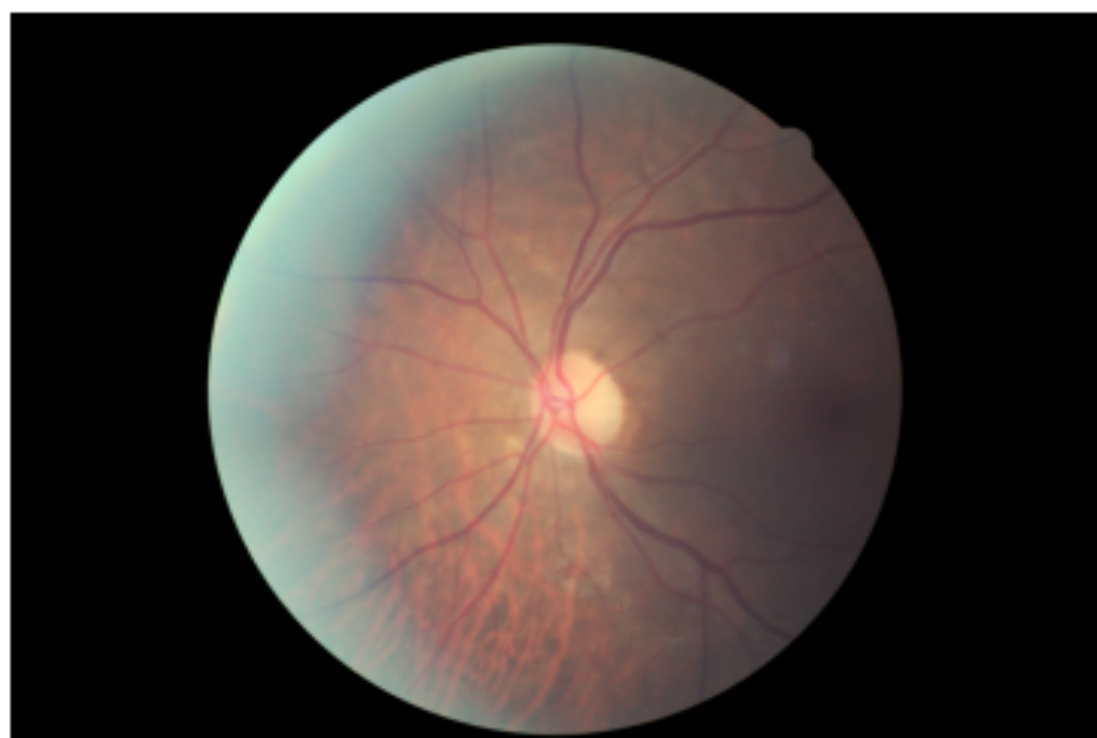
Dataset Key Observations

- Left and right retinal images (starting with 8408 images) with severity score
- Imbalance in dataset, dataset skewed towards class 0

Severity Level Distribution by Eye Type



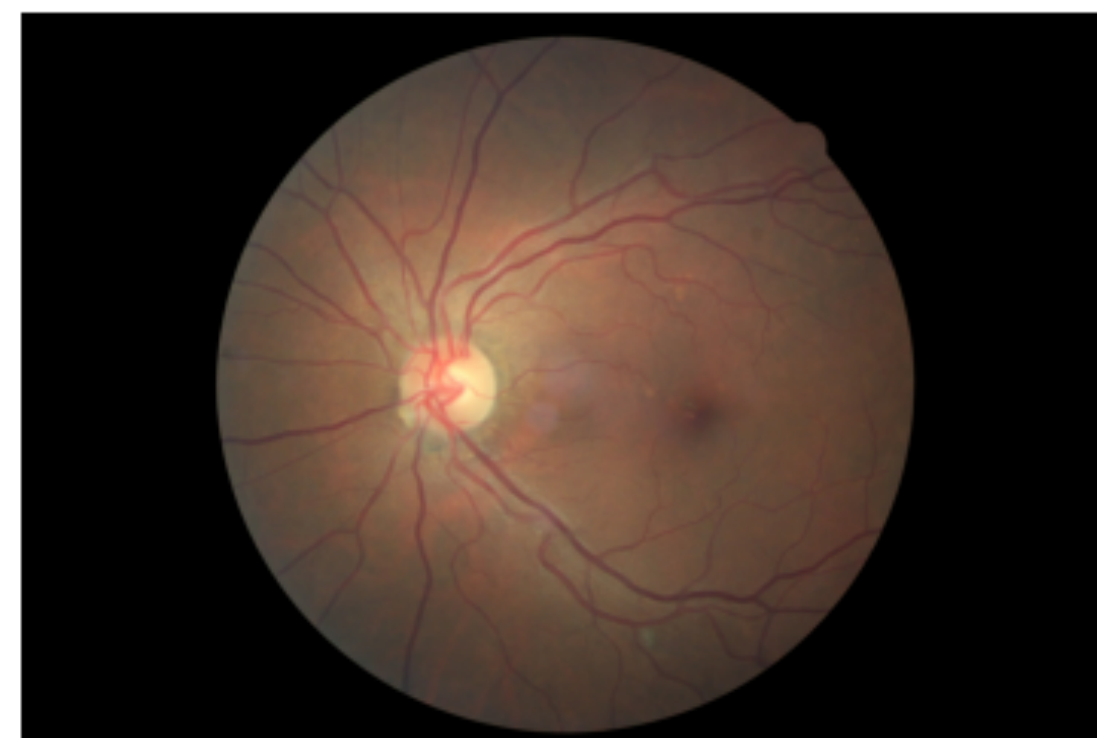
Severity 0



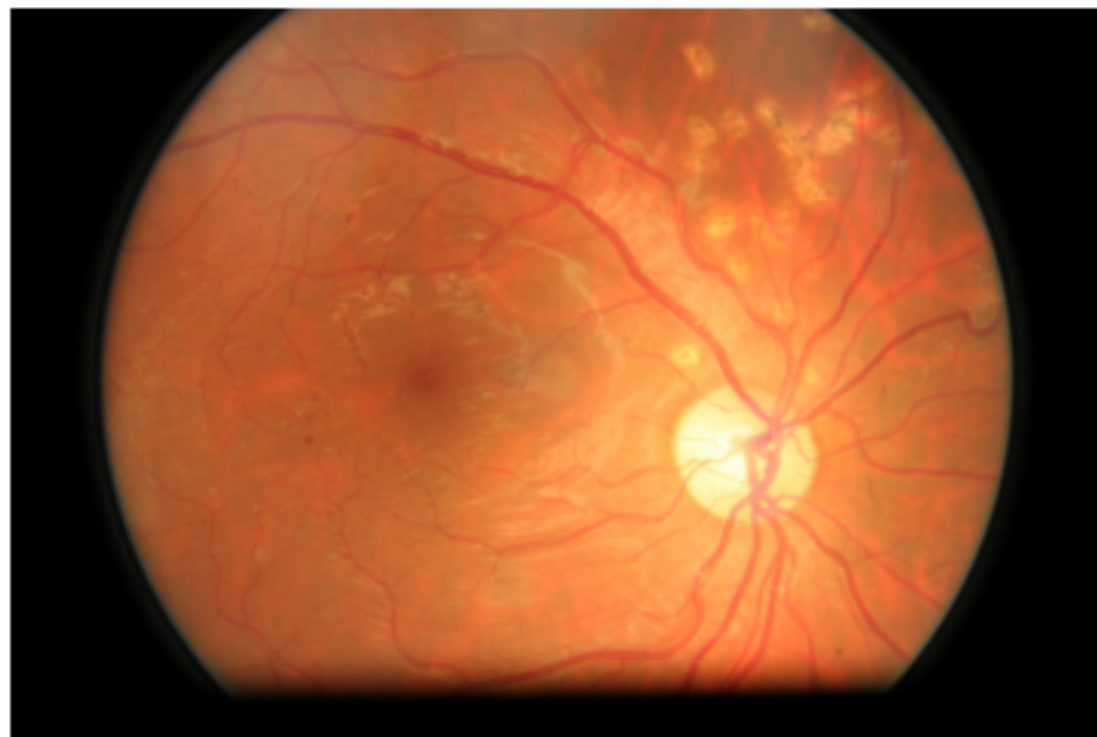
Severity 1



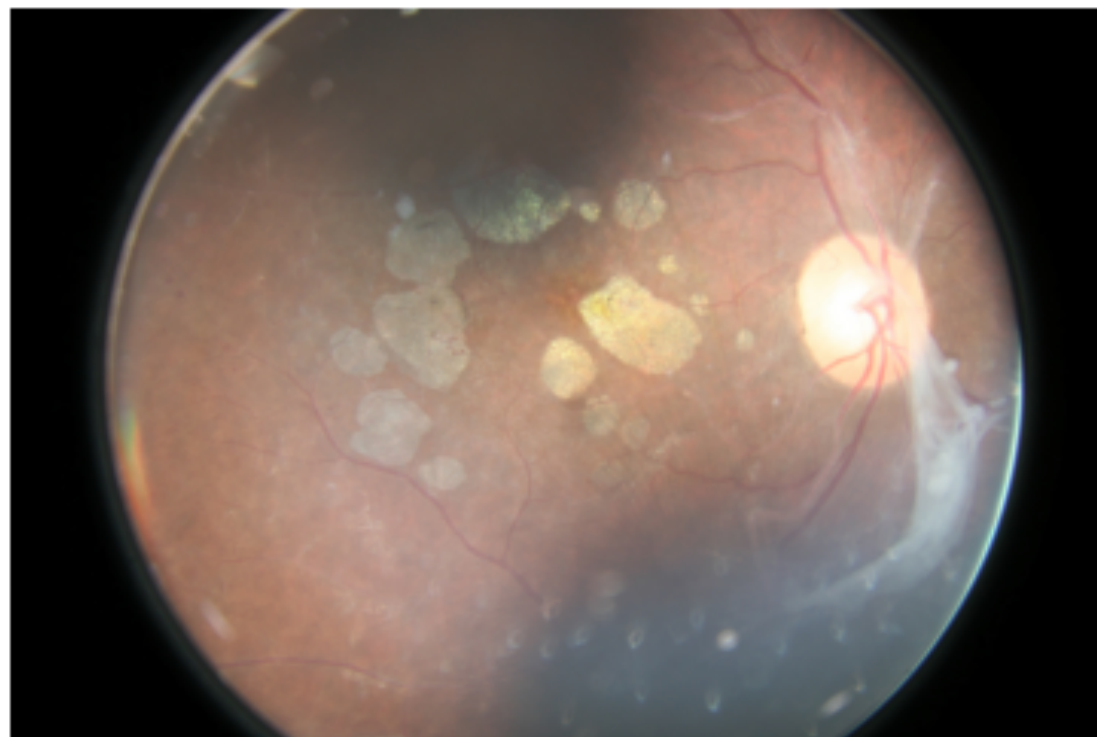
Severity 2

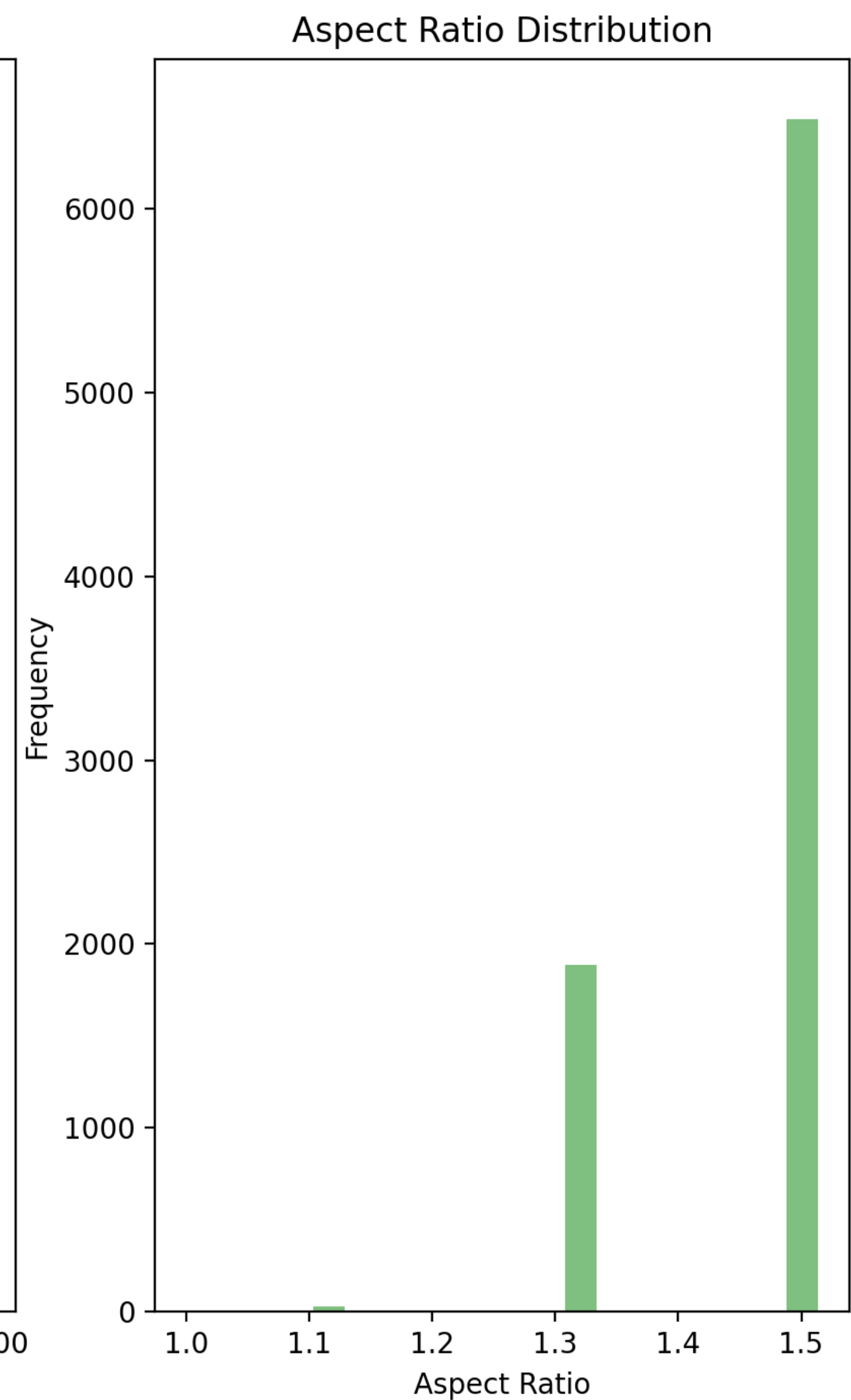
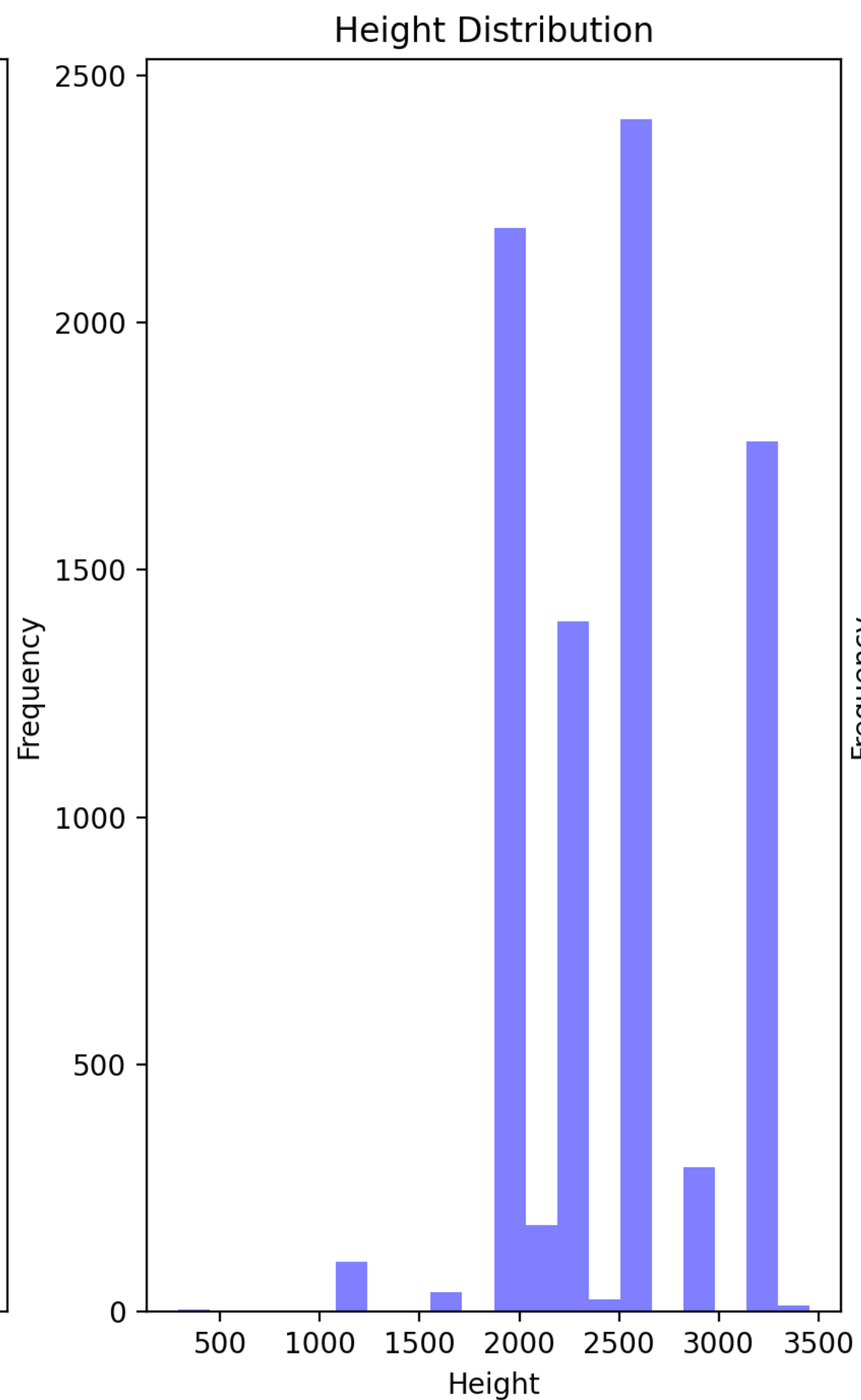
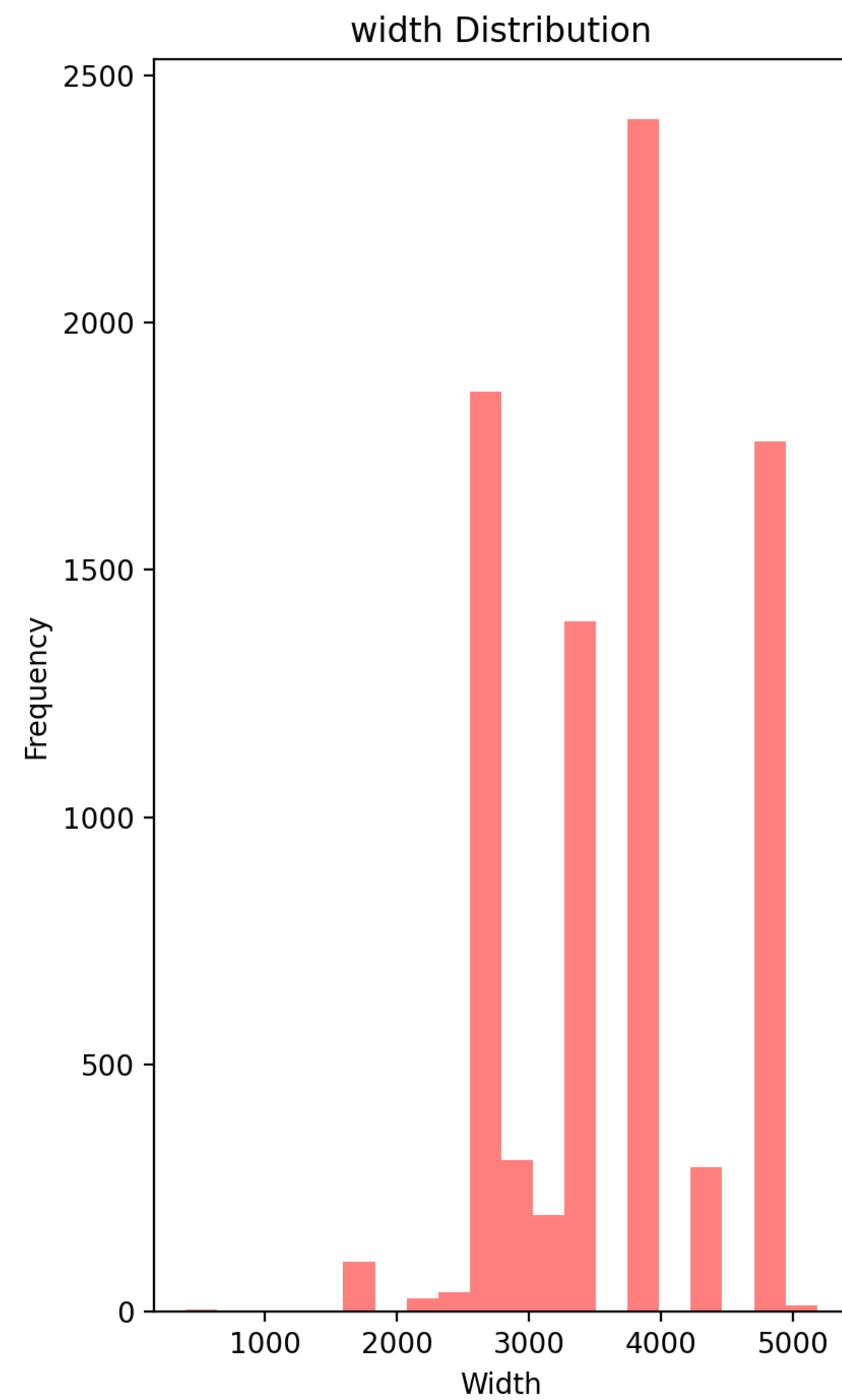


Severity 3



Severity 4





Next steps

- Identify inverted images (maybe using pre trained object identifier models)
- Crop image around the eye and pad to get consistent image size
- Improve image resolution for darker images
- Tackle storage issue and try to get more images to balance out the dataset