

# Zero deforestation mission

Recyclops team solution



# Solution at a glance

An ensemble of the best 13 fine-tuned models comprising of:

- OpenClip models pretrained on LAION dataset (ViT-B-16-plus-240, ViT-B-32, ViT-L-14, ViT-H-14, ViT-g-14, ViT-B-16)
- Keras models pretrained on Imagenet (ResNet50, ResNet50V2, MobileNetV2)
- Achieves a validation f1 score of 0.754

# Solution details

- Careful experimentation and hyperparameter tuning running multiple experiments for each configuration and computing uncertainty of the metrics
- [Awesome documentation](#) of the experiments with MkDocs
- The best single model achieved a val f1 score of 0.78 but was not consider trustworthy. It was preferred to ensemble more models at the cost of lower validation score with the hope of better generalization

# Solution details

- Stratified train/val split with 20% of the data used for validation
- Image information was considered enough and coordinates or year was discarded
- Data augmentation improved the validation score
- Things that did not improved the validation score
  - Balancing the classes
  - Dropout
  - Increasing the contrast of the images

# 100

More than 100 models were trained for this challenge