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 hyperpameter 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

111

More than 111 models were trained for this challenge