Schneider Electric Hackathon

Zero Deforestation Mission

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The Data

- 3 classes
- Very unbalanced training set:
  - Plantation: 860
  - Grassland/Shrubland: 196
  - Smallholder Agriculture: 658
- We resorted to StratifiedKFold for cross validation
- Normalize images using ImageNet statistics for pre-trained models

The Models

- We used PyTorch
- Our own data loaders
- Torchvision implementations of pre-trained image models on ImageNet
- Tried Adam and AdaGrad as optimizers with and without various schedulers

- Experiments with:
  - resnet-18
  - vgg-16
  - mobilenet-v3
- Fine-tuning on deforestation data w/5 way stratified CV for each model
- Final model: voting ensemble of 5 best performing models

Results

- Trained locally with our GPUs and using cloud services (Google Colab, Kaggle)
- Best CV results were fine-tuned VGG-16. Macro F1-scores:

Fold	VGG-16
0	74.09
1	72.84
2	76.07
3	79.78
4	76.27