# My part of solution from 7th place with code

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Here is repo with my part of ods.ai team code for this competition:
https://github.com/N01Z3/kaggle_amazon_from_space

It might be interesting for using mxnet for training models and pytorch for data iterator.

## Models

Here is models with scores averaged through 10 folds CV, 21 TTA, 0.2 threshold for all classes:

- DPN 98 (0.93025)
- DPN 92 (0.93010)
- ResneXt 101 (0.92994)
- ResneXt 50 (0.92984)
- ResNet 50 (0.92961)

## Train

- Finetune from imagnet 1k for all models except ResNet-50 (imagenet-11k + Places365)
- All training using SGD, with Nesterov Momentum 0.9 and Weight Decay 0.0001.
- During first two epochs only FC layers were trained with freeze conv layers. Then the full network was trained.
- The training began with a learning rate of 0.01. Validation checked 5 times in 2 epochs. If within 10 checks the validation loss did not decrease, the learning rate decreased by 10 times. Learning rate decreased 2 times.
- The size of the batch was chosen depending on the devbox on which the training took place and was from 64 to 256 for different models.
- All models had an input of 256x256.
- Throughout the training, augmentations were used: crop, rotation, distortion, flip, mirror, transposition, blur, contrast.

## Predict

For each model, the 3 best checkpoints were selected by loss. For each checkpoint, the original image was rotated to angles: 90, 180, 270 degrees, transposed, and also reflected vertically and horizontally. Thus, 21 TTAs were obtained for each model.