Zero deforestation mission

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PROBLEM

	label	latitude	longitude	year	example_path
0	0	-2.051853	111.826093	2001	train_test_data/train/1297.png
1	2	-1.989349	105.309496	2013	train_test_data/train/1199.png
2	0	1.223256	100.702217	2014	train_test_data/train/1348.png
3	0	-2.342948	103.890226	2008	train_test_data/train/2214.png
4	0	-0.126555	101.758175	2011	train_test_data/train/2220.png

Train Dataframe

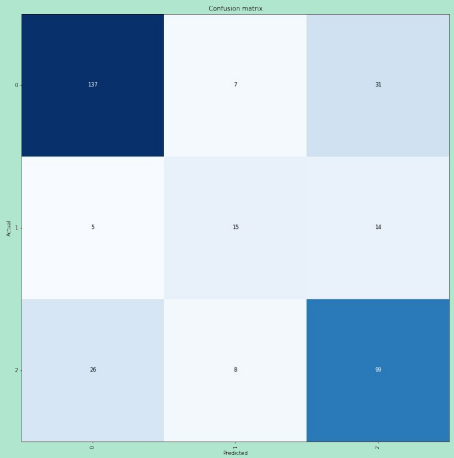
	latitude	longitude	year	example_path
0	0.761681	122.755954	2006	train_test_data/test/69.png
1	-8.059785	113.053791	2007	train_test_data/test/469.png
2	-2.006610	111.746316	2002	train_test_data/test/6.png
3	0.901765	114.042495	2016	train_test_data/test/351.png
4	1.911210	100.829633	2008	train_test_data/test/1001.png

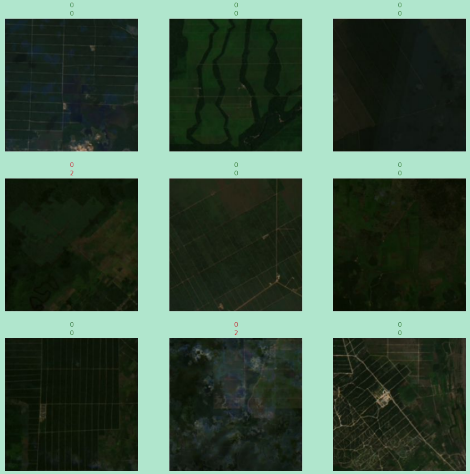
Test Dataframe

Batch

We have to train a AI to detect which type of deforestation (0,1,2) have each image

FIRST MODEL resnet34





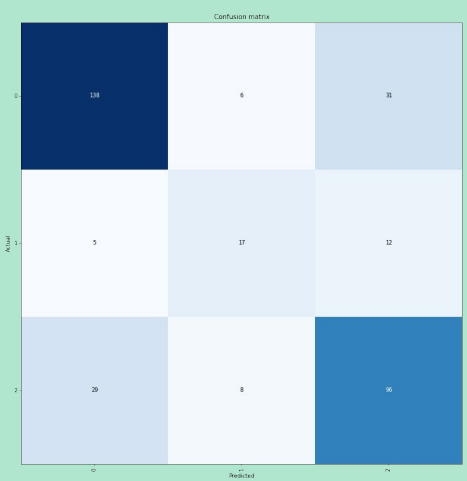
We used the model resnet34, which shows a strong identification with 0 and 2 deforestation types, but they are sometimes confused.

It has a 0.27 error rate, so we want to improve it.

```
interp.most_confused(min_val=3)
```

```
[(0, 2, 31), (2, 0, 26), (1, 2, 14), (2, 1, 8), (0, 1, 7), (1, 0, 5)]
```

SECOND MODEL resnet50



Then we tested model resnet50 hoping for better predictions.

Resnet50 get a 0.19 error rate.

CONCLUSIONS

	error_rate
resnet34	0.2719
resnet50	0.1900

We choose model resnet50 which has better performance than resnet34. We'd like to test more about it, but we experienced some issues with the google collab performance.

Finally from resnet50 error rate, we could calculate the accuracy and f1 score so we can agree that is the best option about this two models.

	accuracy	f1 score
resnet50	0.8099	0.7106