What if you had used our forest fire prediction model ?

Santa Rosa from
Northern California fires

Challenge 1 : Fire mapping

CY Fire team

Ordronneau Luca
Reberga Louis
Moncoutie Johan
Ettarian Julian

Match composite polygons

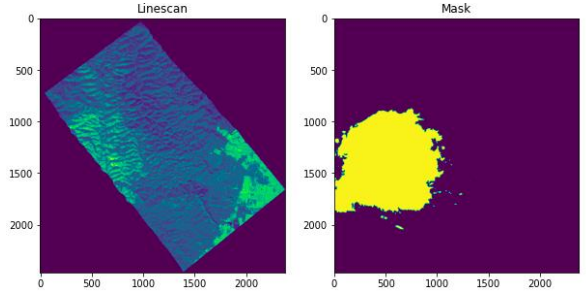
'COMPOSITE_WALLHALLA_397,398_&_401_20190225_(1311_TO_1342HRS)'

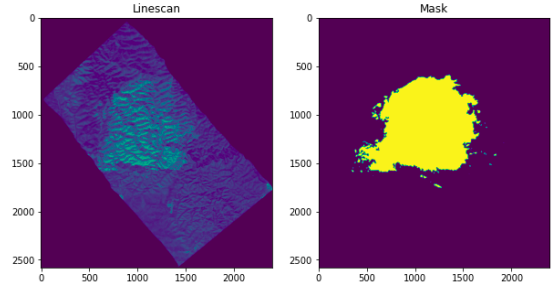
Algorithm

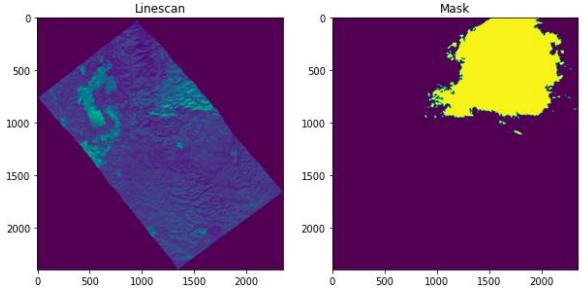
[397, 398, 401]

Algorithm

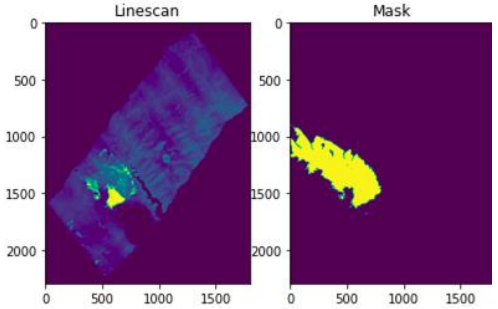
['WALHALLA_397_P1_201902251311_MGA94_55', 'WALHALLA_398_P1_201902251323_MGA94_55', 'WALHALLA_401_P1_201902251342_MGA94_55']



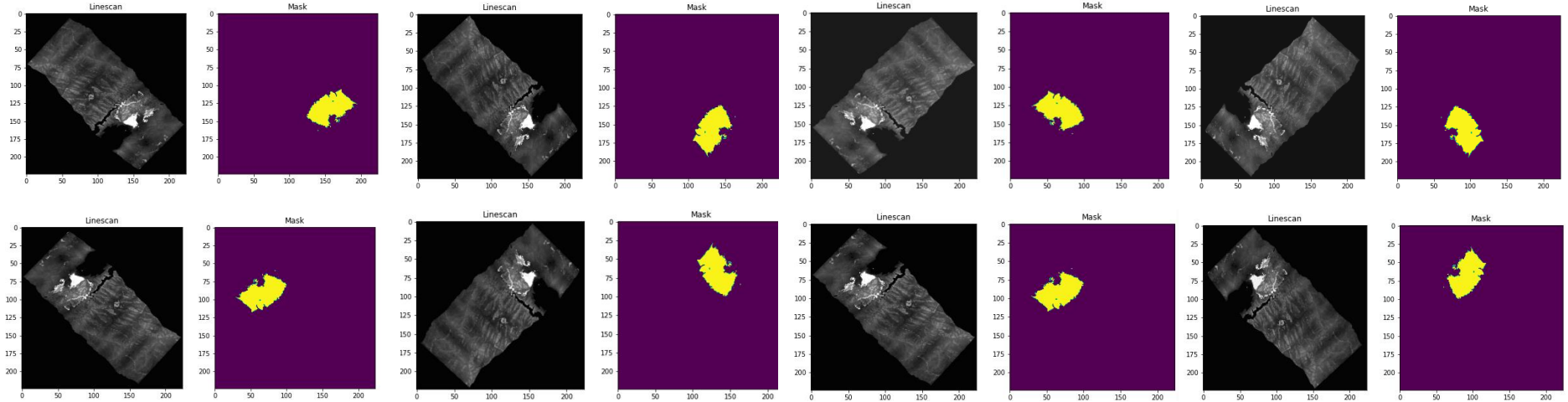




Pre Processing



- Resize
- Gaussian Filter
- Normalisation
- Image Augmentation
- Mask modification
- CLAHE



Model

Unet (F1 score ~ 0.45 - 0.50)

Unet with Pretrained ResNet50 Encoder (F1 score ~ 0.65 - 0.70)

Unet with Pretrained InceptionResNetV2 Encoder (F1 score ~ 0.70 - 0.73)

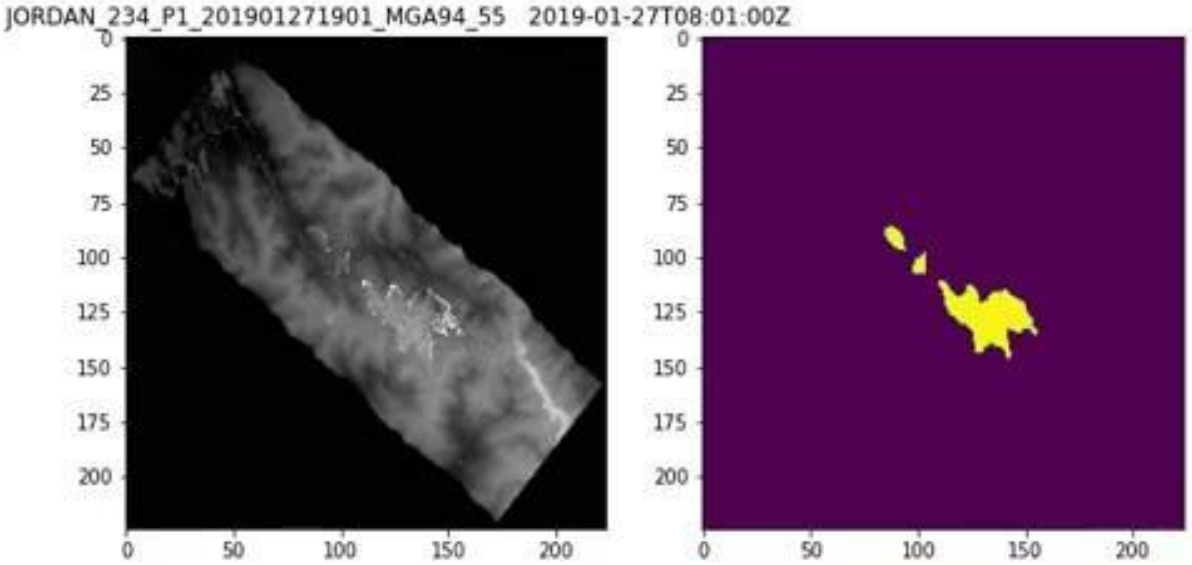
Benefits

- Using a **pre-trained encoder** helps the model to **converge much faster** in comparison to the non-pretrained model.
- A pre-trained encoder helps the model to **achieve high performance** as compared to a non pre-trained model.

Improve society's resilience to bushfires

24/7 surveillance
Help firefighters react faster
Prevent human and material losses

Results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