Semantic Segmentation of Satellite Images

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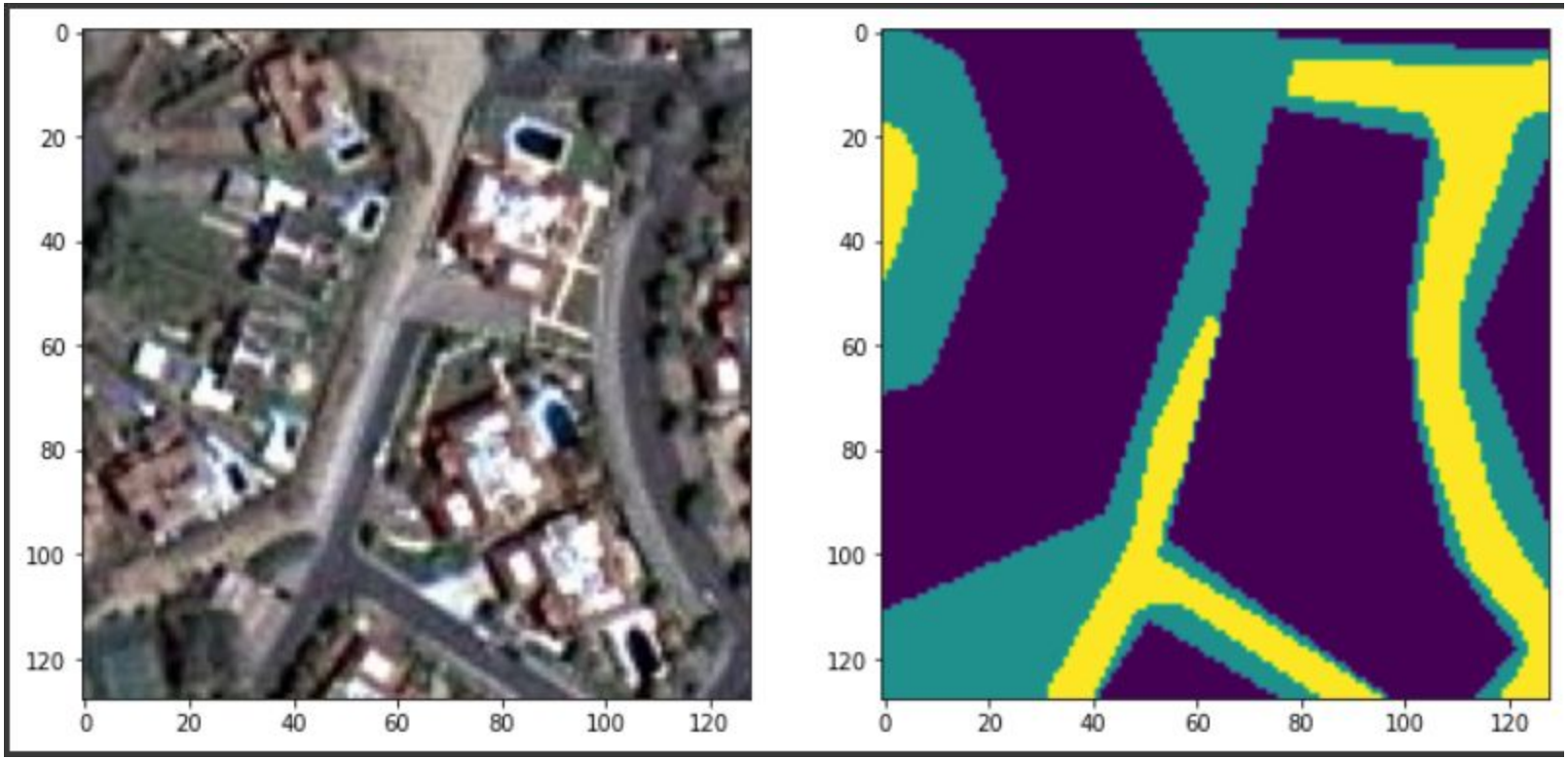
Problem

- The dataset consists of aerial imagery of Dubai obtained by MBRSC satellites and annotated with pixel-wise semantic segmentation in 6 classes (**Building, Land, Water, Vegetation, Road, Unlabeled**).
- We want to semantically segment the images into the above mentioned classes.


0
20
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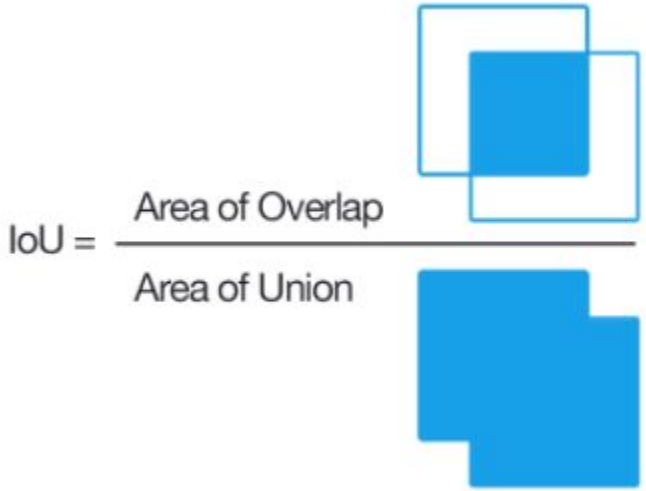
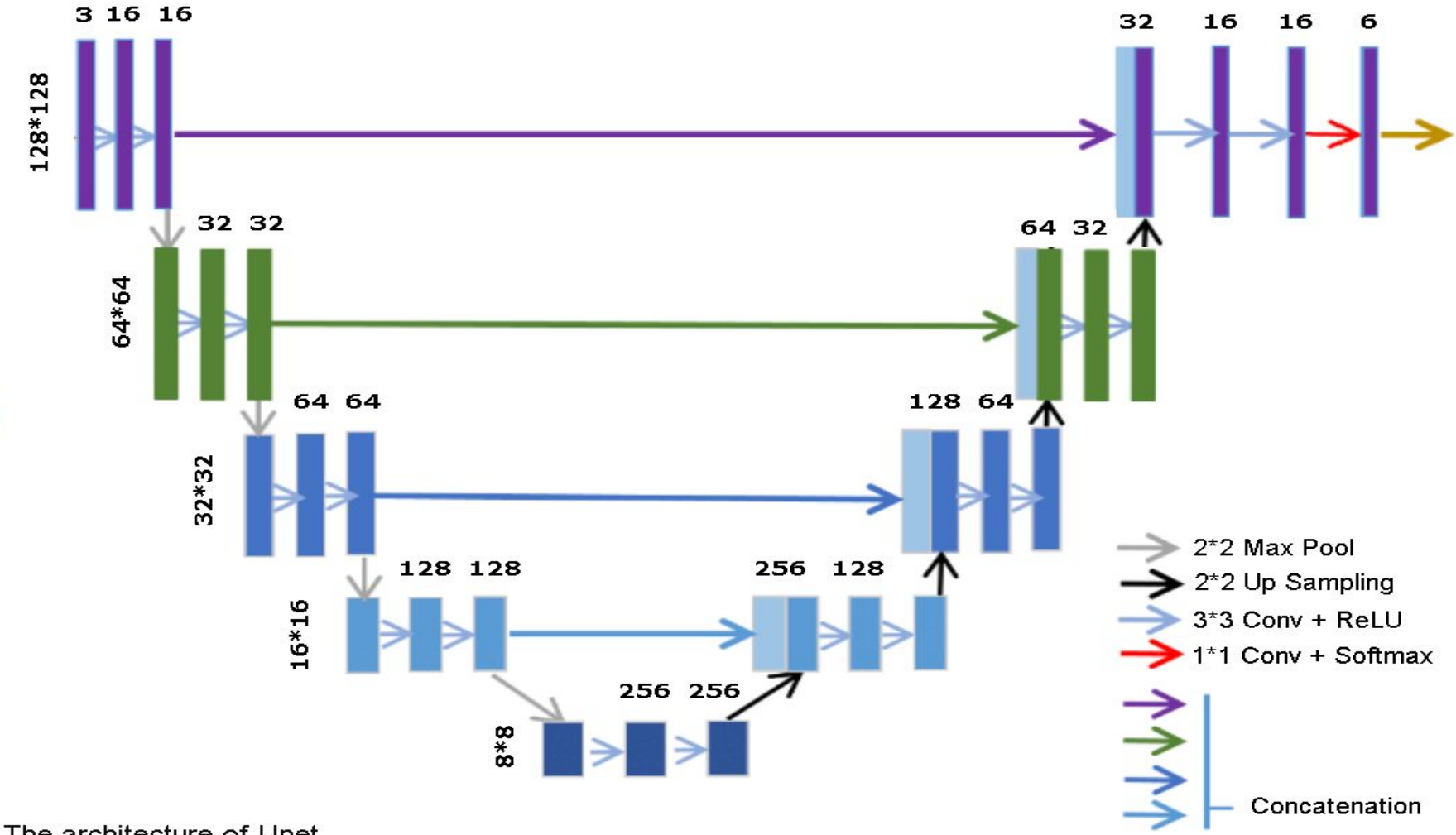
Results

We used Jaccard Coefficient (IoU) as our evaluation metric.

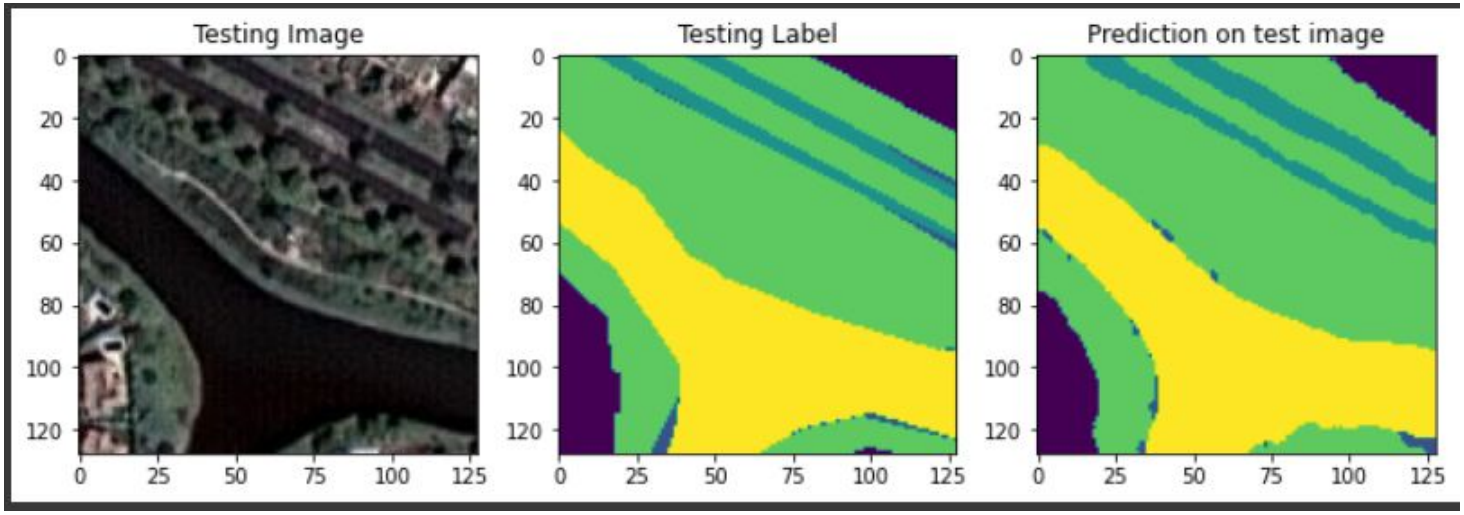


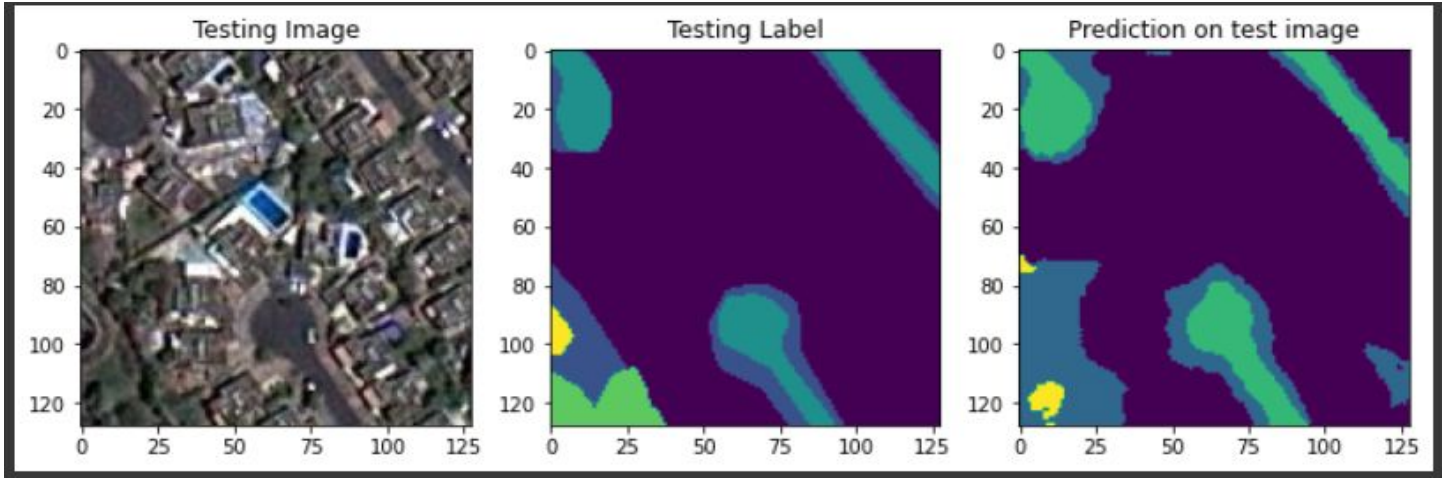


The architecture of Unet.

Results

Learning rate	Validation	Test
0.001	0.73	0.71
0.002	0.71	0.70


Testing Image
Testing Label
Prediction on test image
0
20
40
60
80
100
120
0
25
50
75
100
125


Testing Image
Testing Label
Prediction on test image
0
20
40
60
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120
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25
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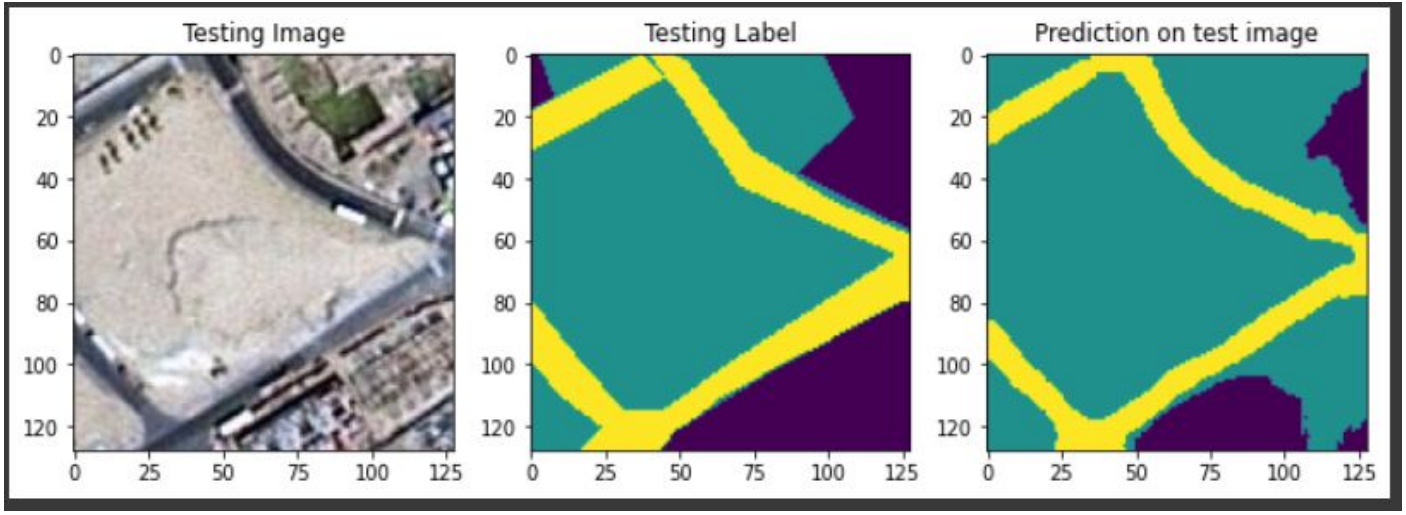
75
100
125


Testing Image
Testing Label
Prediction on test image
0
20
40
60
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120
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25
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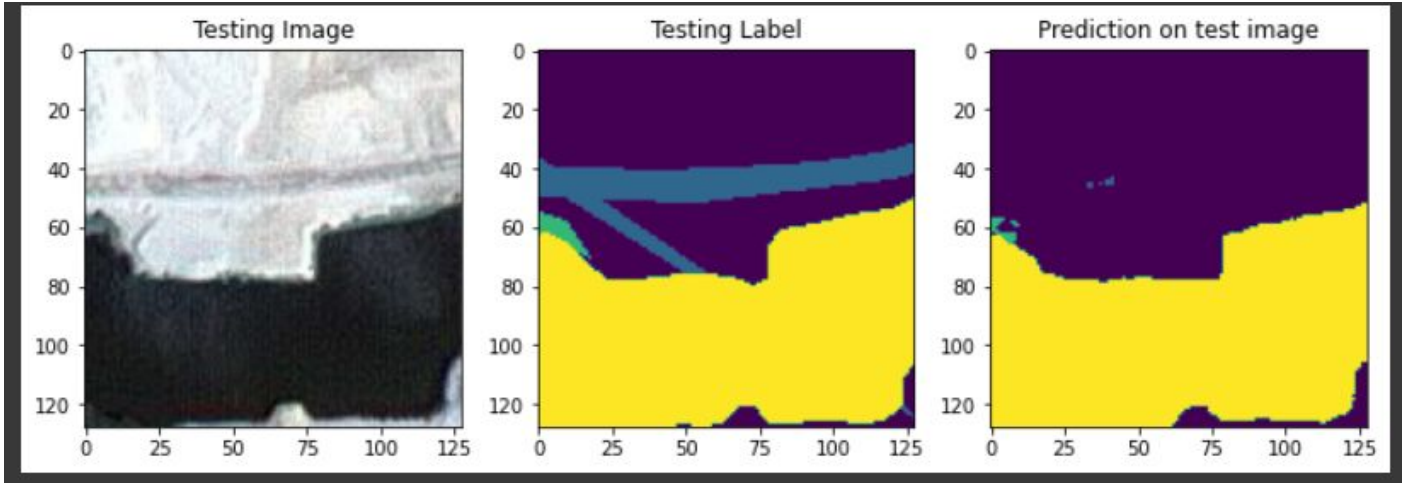
125


Testing Image
Testing Label
Prediction on test image
0
20
40
60
80
100
120
0
25
50
75
100
125

Challenges

- Due to lack of computational power, we could not achieve desirable performance on MSCOCO dataset.