Neural Network for 3D Segmentation in Geology

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Image Segmentation In General
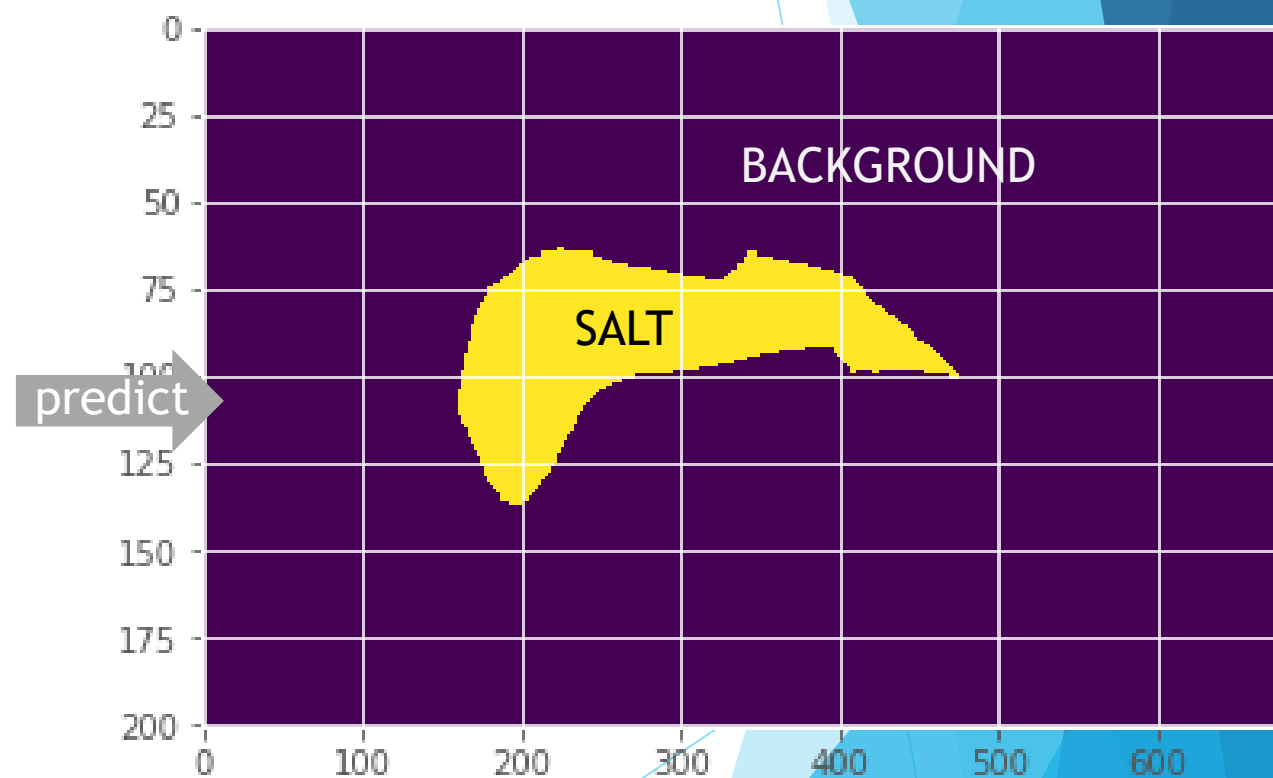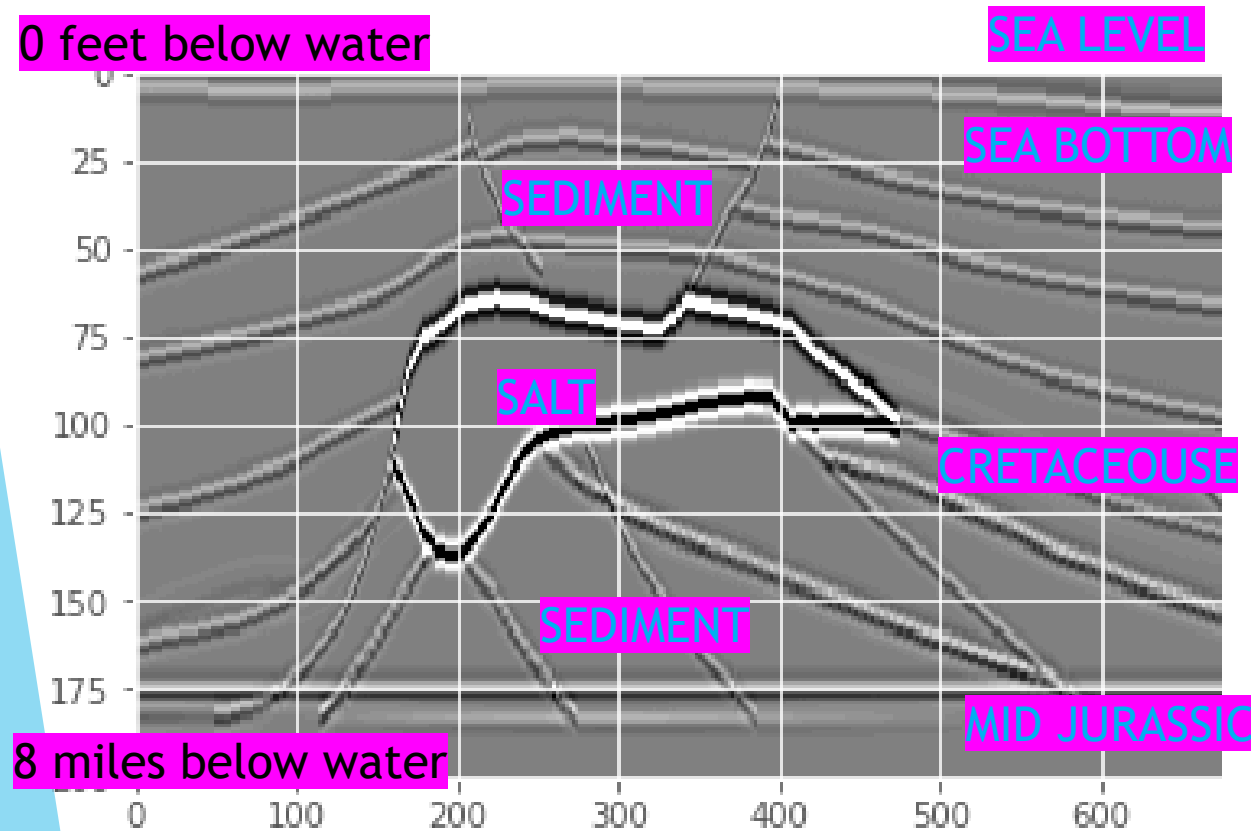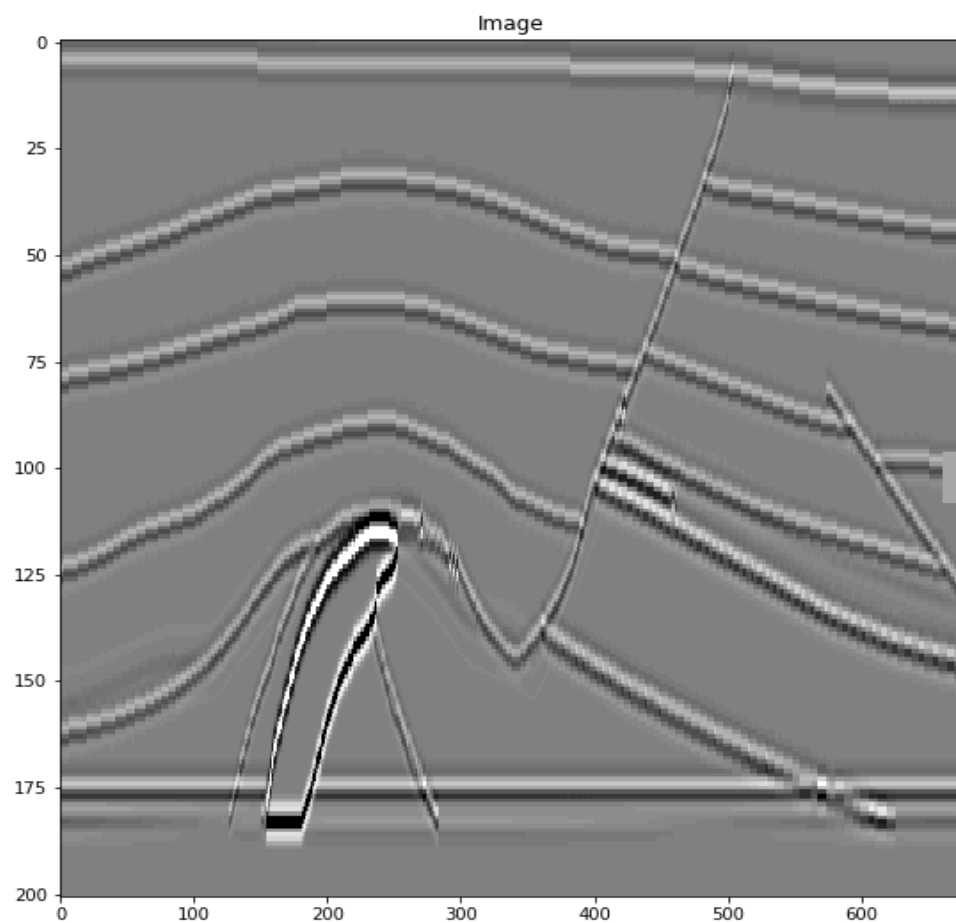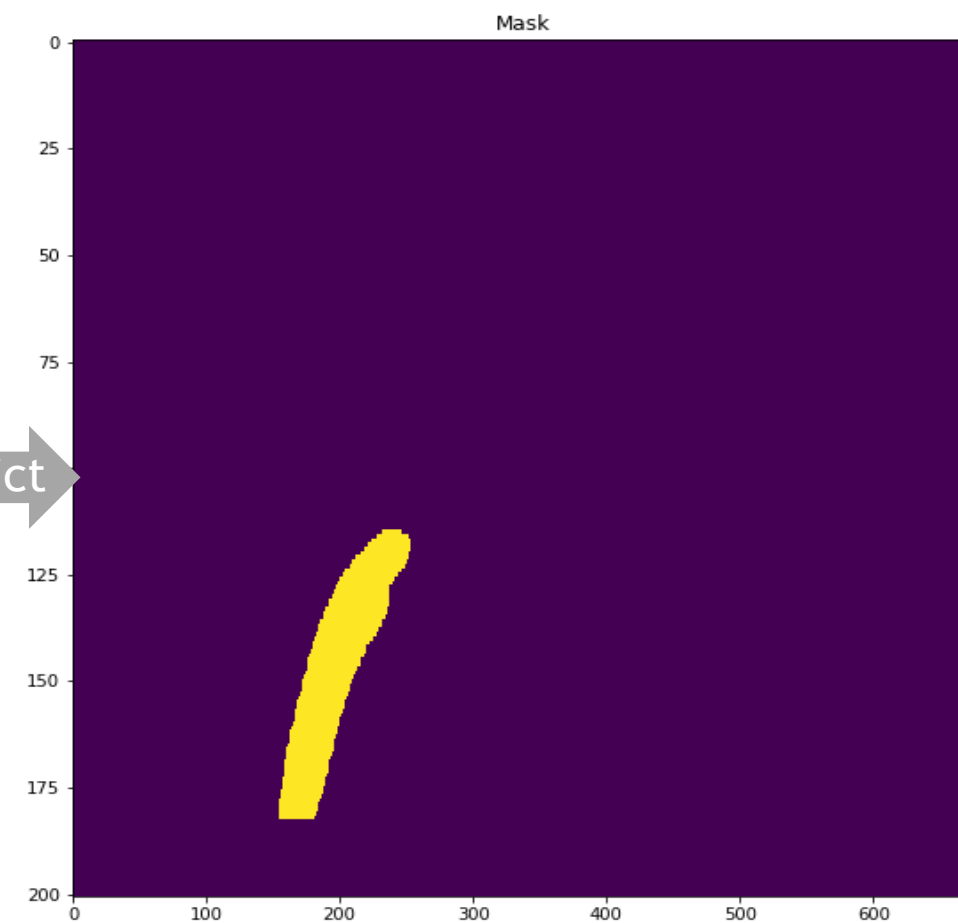

predict
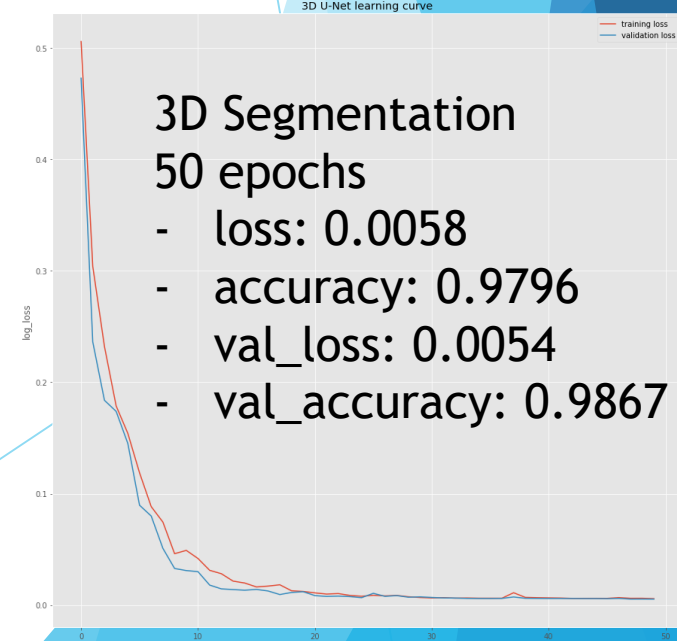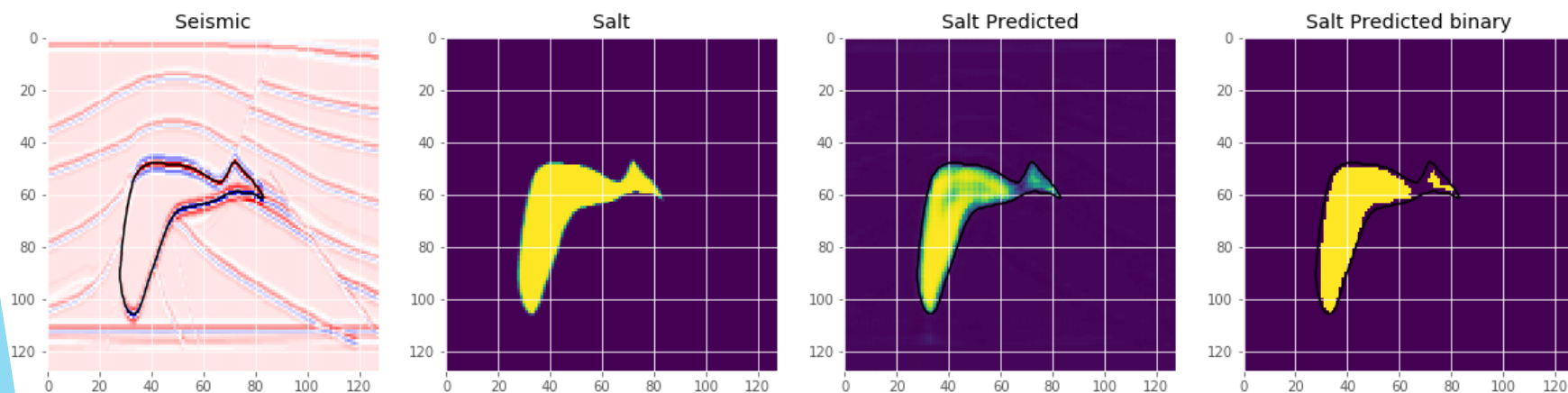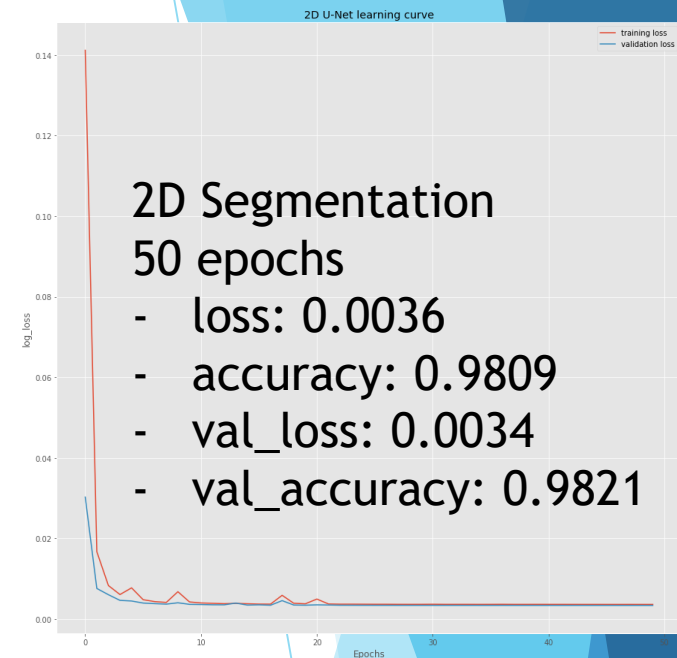
Person
Bicycle
Background

3D Geological Volume Segmentation

3D Image Segmentation

Result

2D Segmentation
50 epochs
- loss: 0.0036
- accuracy: 0.9809
- val_loss: 0.0034
- val_accuracy: 0.9821

3D Segmentation
50 epochs
- loss: 0.0058
- accuracy: 0.9796
- val_loss: 0.0054
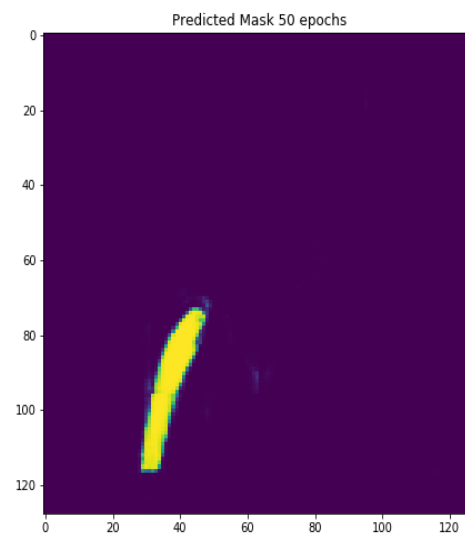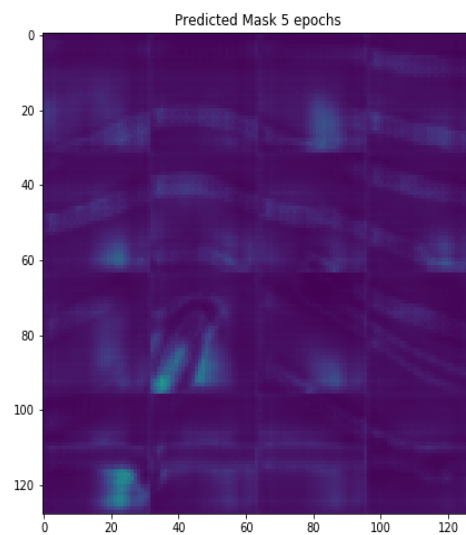- val_accuracy: 0.9867
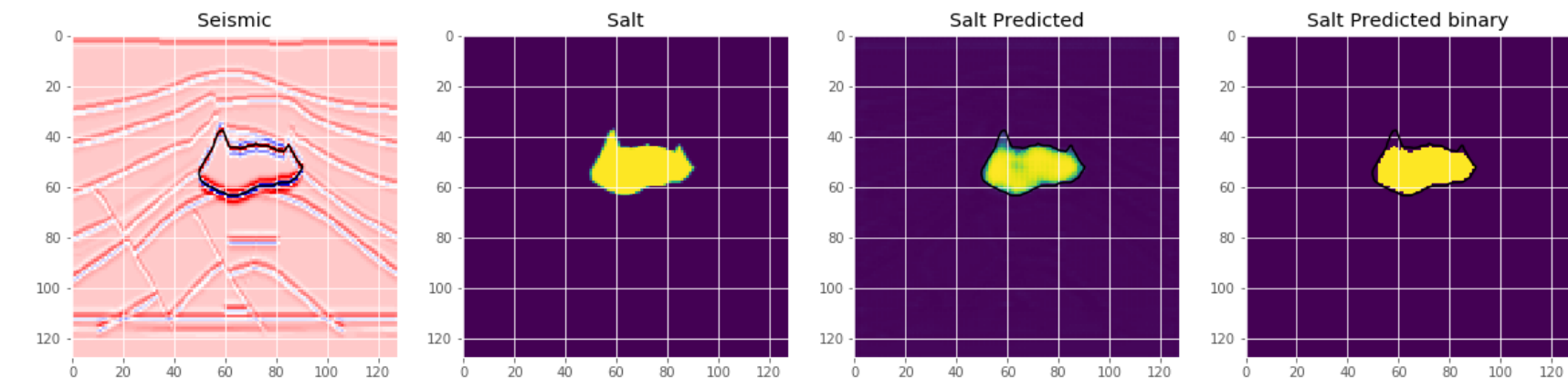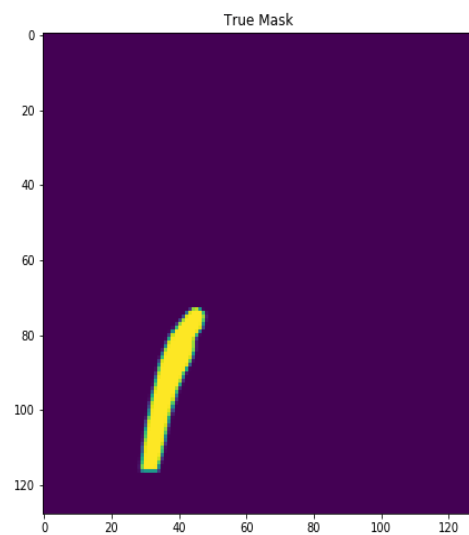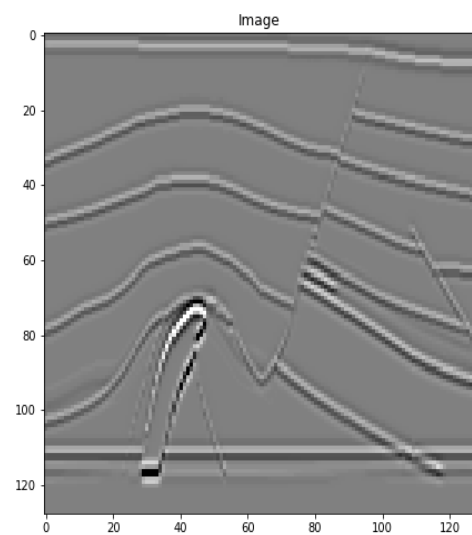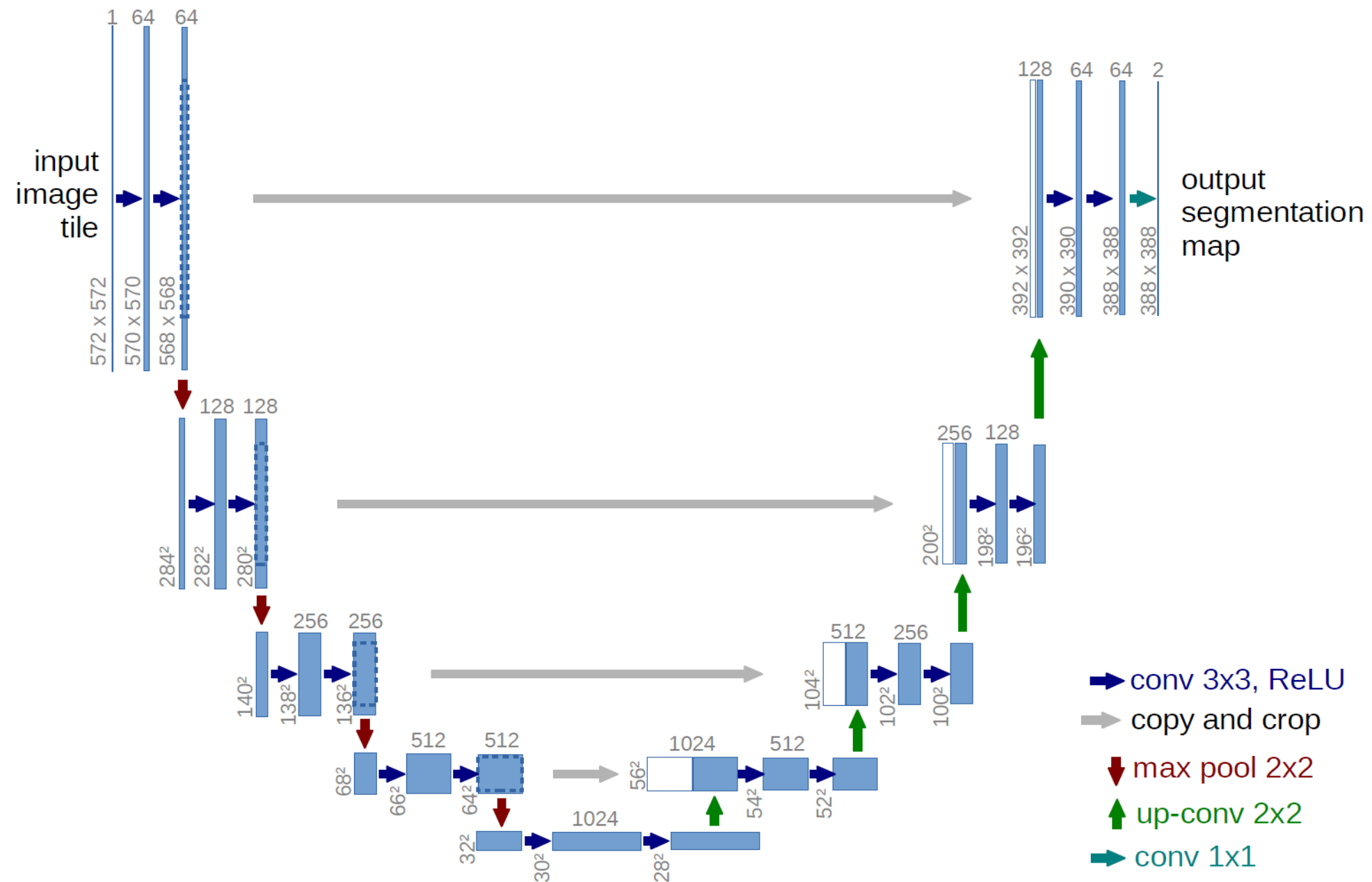
Result(cont.)

Technology

AWS EC2

Python

Matplotlib

Obspy

Numpy

Scikit-image

Tensorflow/Keras

UNET Model (Ronneberger, 2015)
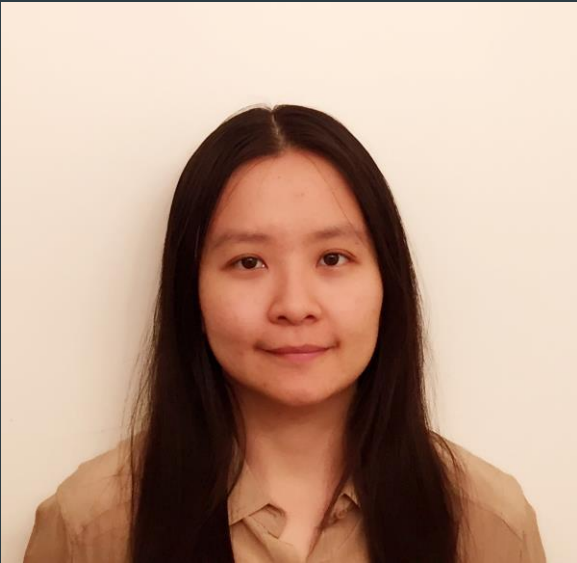
Future work

Real data

w/o Batch normalization

Loss function/Activation function

Model structure

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