DEEP LEARNING PROJECT

# ROAD EXTRACTION FROM SATELLITE IMAGES

BY

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# PROBLEM STATEMENT

In traffic management, urban planning, automatic vehicle navigation, and emergency management, road information retrieval is critical. How can we extract road information from remote sensing photographs is a critical concern.

# LITERATURE SURVEY

## 2020

### BARIS DANCER

- Satellite Road Extraction
- DeepGlobe Dataset
- Auto Encoder Method
- Accuracy 95%

## 2020

### BALRAJ ASHWATH

- Roadmaps from aerial Images
- DeepGlobe Dataset
- DeepLabV3 Method
- Accuracy 96%

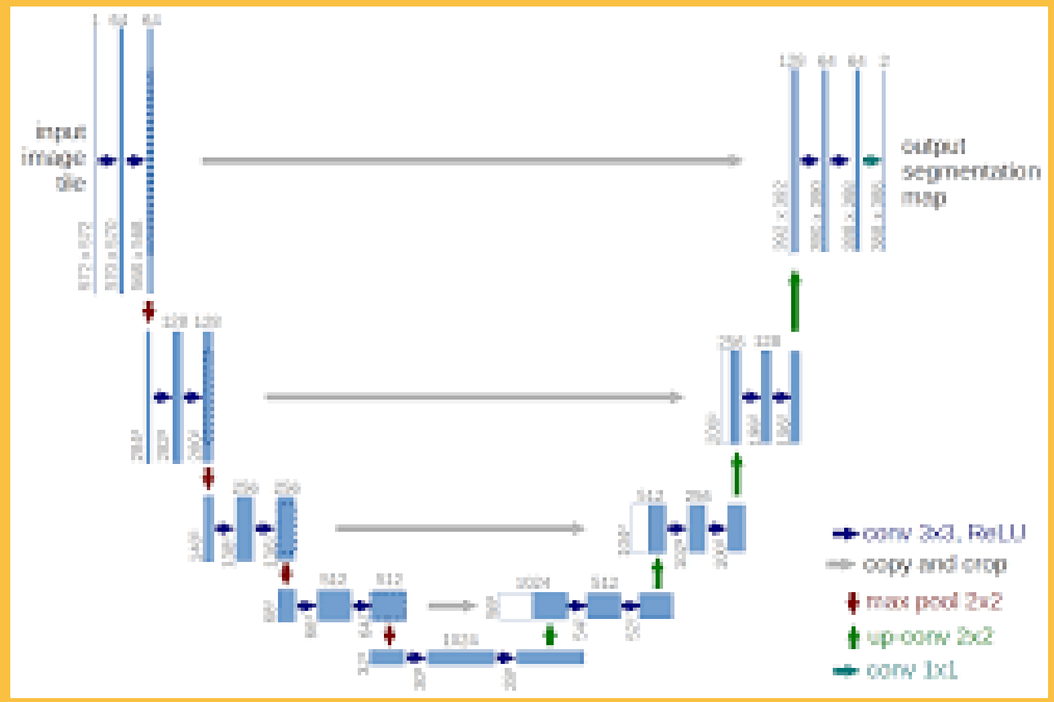
## 2017

### ZHENGXIN ZANG

- Road Extraction by Deep Residual U-Net
- Massachusetts Roads Dataset
- U-net Method
- Accuracy 90.53%

# METHODOLOGY

U-Net is a semantic segmentation architecture. It has two paths: one that contracts and one that expands. The convolutional network's contracting route follows the standard architecture. It comprises two 3x3 convolutions (unpadded convolutions) that are applied repeatedly, each followed by a rectified linear unit (ReLU) and a 2x2 max pooling operation with stride 2 for downsampling.

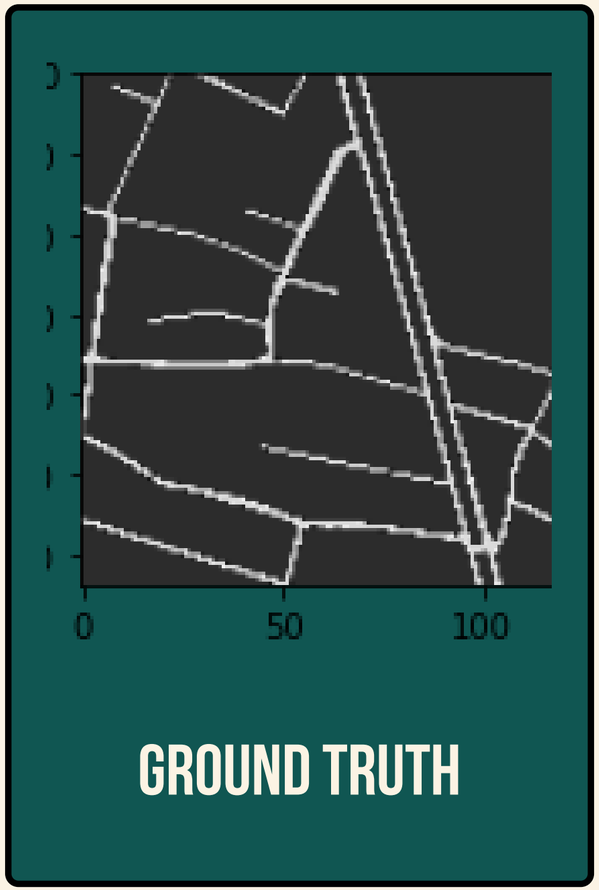


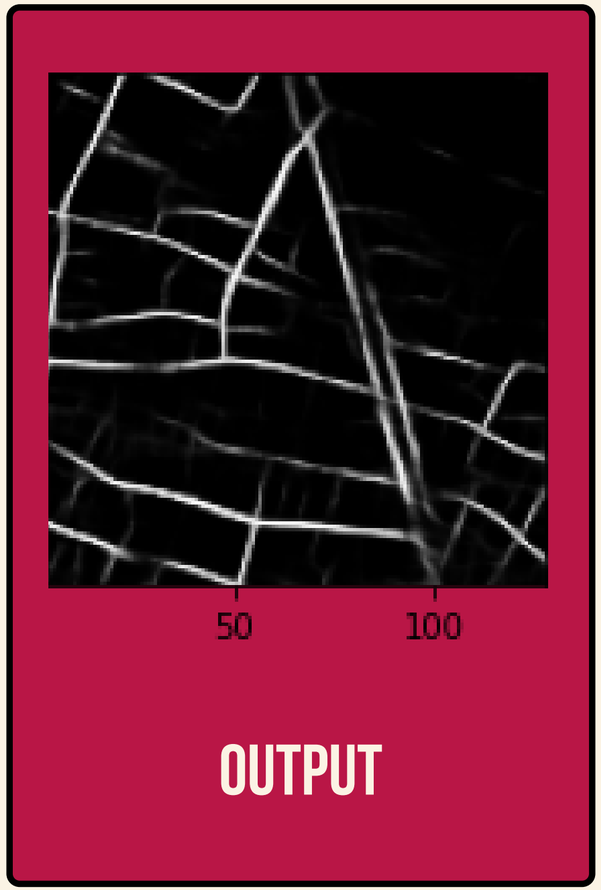

- U-NET ALGORITHM

# RESULTS

The values we achieved are as follows:

- Accuracy: 61%
- IoU: 0.41
- Binary Accuracy: 93%



thankyou

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