

Group_Name: Innovators

Group_No: 9

ML+CV Combined Project: Cell Segmentation

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Changes:

We have changed our topic from Brain Tumour segmentation to cell segmentation as it required 3d images so it was computationally very heavy so we decided to go with cell segmentation using UNet

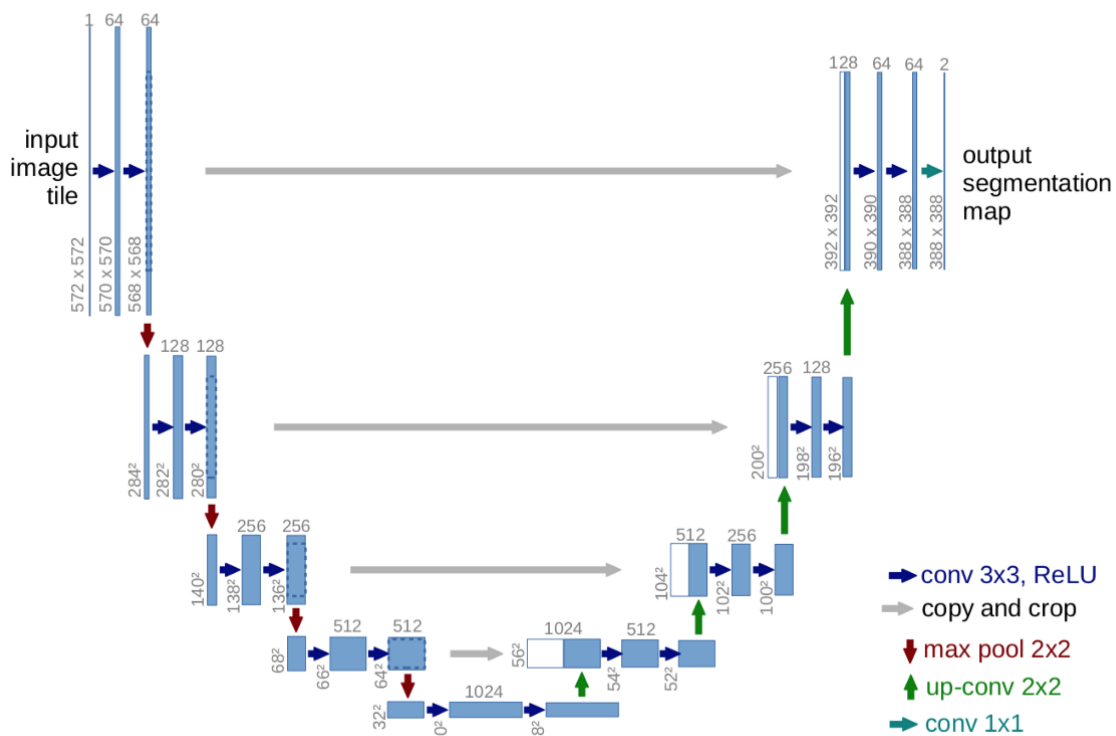
Tasks Performed in the week:

We read the U-Net research paper and understood it.

Outcomes of the tasks performed:

This paper describes a novel approach to training deep neural networks for image segmentation tasks. The approach uses a combination of data augmentation techniques and an

innovative network architecture, which consists of a contracting path and an expanding path, to make the most efficient use of limited annotated training data.



The results of the experiments show that the proposed method outperforms the prior best method (a sliding-window convolutional network) on the ISBI challenge for segmentation of neuronal structures in electron microscopic stacks. Additionally, the network trained on transmitted light microscopy images achieved the highest performance in the ISBI cell tracking challenge 2015, demonstrating its versatility and effectiveness in a range of imaging modalities. The network is also computationally efficient, with a fast inference time of less than a second for a 512x512 image.

Tasks to be performed in the upcoming week.

Decide and preprocess the dataset and start downloading all the necessary frameworks and libraries like Tensorflow etc

REFERENCES:

<https://paperswithcode.com/paper/u-net-convolutional-networks-for-biomedical>