

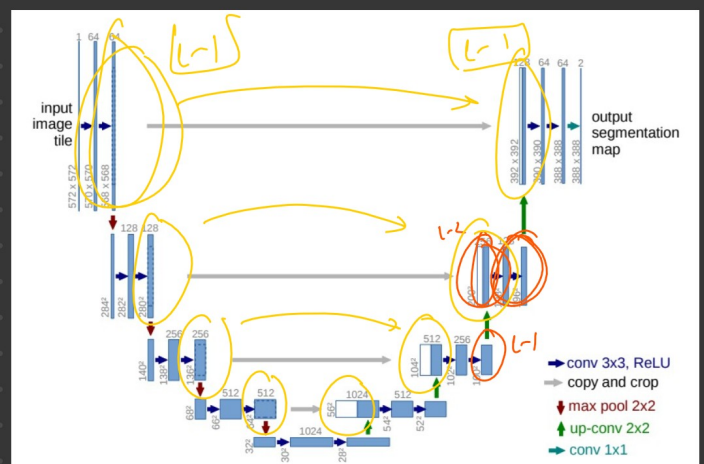
U-NET



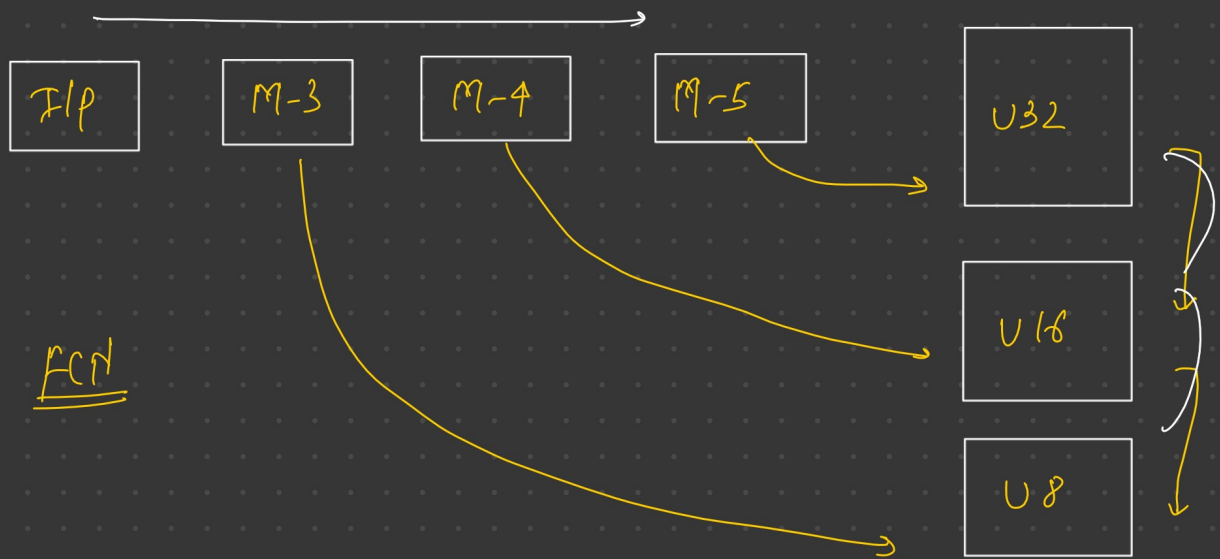
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Unet - is a fully convolutional neural Network (FCN)

- Contracting path (Encoder)
- Expanding path (Decoder)
- Skip connection
- very few training samples.



Why UNet is better than FCN?



- ① UNet directly connects encoder layer to decoder layer, passing fine details at multiple resolution
- ② FCN mainly upsamples the feature map back to its original shape but UNet we try to mirror the contracting path
- ③ FCN struggles with small object, while UNet preserves fine-grained details.
- ④ FCN uses transposed convolution, while UNet uses upsampled features using additional convolution.
- ⑤ FCN needs a large dataset while UNet can work effectively with small data. (data augmentation)