TernausNet: U-Net with VGG11 Encoder Pre-Trained on ImageNet for Image Segmentation

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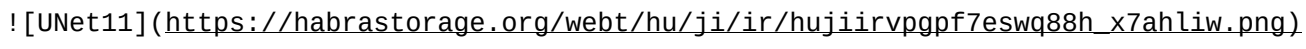
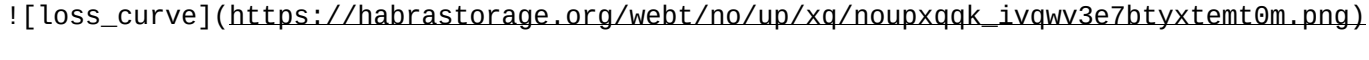
Introduction

TernausNet is a modification of the celebrated UNet architecture that is widely used for binary Image Segmentation. For more details, please refer to our [arXiv paper](https://arxiv.org/abs/1801.05746).



(Network architecure)



Pre-trained encoder speeds up convergence even on the datasets with a different semantic features. Above curve shows validation Jaccard Index (IOU) as a function of epochs for [Aerial Imagery](https://project.inria.fr/aerialimagelabeling/)

This architecture was a part of the [winning solutiuon](http://blog.kaggle.com/2017/12/22/carvana-image-masking-first-place-interview/) (1st out of 735 teams) in the [Carvana Image Masking Challenge](https://www.kaggle.com/c/carvana-image-masking-challenge).

Citing TernausNet

Please cite TernausNet in your publications if it helps your research:

```
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           year = 2018
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Example of the train and test pipeline

https://github.com/ternaus/robot-surgery-segmentation