Final Project - 2018 Data Science Bowl (Kaggle Project)

Find the nuclei in divergent images to advance medical discovery

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****** Aim ******

Finding the series of pixels which contain nuclei in the given image.

****** Data Set ******

This is a kaggle project, trending # 1 currently. So, there are no complications regarding finding good dataets.

/stage1_train/* - training set images (images and annotated masks)
/stage1_test/* - stage 1 test set images (images only, you are predicting the masks)

****** Evaluation ******

You predict image pixels which might contain nuclei image, from this a metric called Intersection over Union is calculated IoU(A,B)=A∩B for predicted location/ A∪B for ground truth location.
This is considered a hit or miss based on certain thresholds from 0.5 to 0.95 with a step size of 0.05
For each threshold we calculate precision value which is given by

TP(t)/TP(t)+FP(t)+FN(t) where TP is true positive, FP is false positive, FN is false negative .

Finally we average this precision values over all threshold values

****** Strategy ******

We plan to use CNN deep neural networks using Tensorflow with different techniques to train our network