Fundamentals of Machine Learning - Kaggle Competition Report

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1 Introduction

We preface this document by saying this kaggle competition was a very pleasant and strong learning experience. Thank you for the opportunity. In this Kaggle competition, we are asked to implement and solve a remote sensing problem using recent deep learning techniques. The objective was, given a dataset of small UAV (sUAV) images of Houston, Texas, segment the possible categories of objects present. For example, these categories could be roofs, trees, vehicles, trampolines, or any other of the 25 classes.

These images were acquired in order to assess the damages on residential and public properties after Hurricane Harvey, but could also be used for real estate valuations, a

The task is to design and implement a deep learning model in order to perform the automatic segmentation of such images. The model can be trained using the train images which contain pixel-wise annotations. Using the trained model, a prediction on the test images should be performed and submitted on the platform. Depending on the performance of the submitted file and the leaderboard you will be ranked accordingly using macro F1 score.

2 Methodology

2.1 Different Models

2.2 Implementation

2.3 Results

3 Final Model

3.1 Implementation

3.2 Results