

Solution

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Here is an explanation of the finer points of this milestone.

For Step 4, we use the following three-parameter settings for the three instances of the Elliptic Envelope algorithm to let the algorithm know how many outliers to expect: `contamination=outliers_fraction4`, `contamination=outliers_fraction2`, and `contamination=outliers_fraction*1`.

For the performance comparison, we notice that the Average Precision is fairly similar amongst all three variants, so we will need to inspect other metrics. Though the Recall for the robust covariance with contamination factor being 4x the outliers_fraction is slightly better than the one with 2x, if you inspect the number of False Positives between the two variants, you will see that the second variant has only 13 False Positives vs 49 for the one with the 4x multiple. So we would choose the one with the 2x multiple because it is not too far in one extreme or the other. Compared to Milestone 2, all variants of the robust covariance have significantly better performance than one-class SVM.