Analysis Report

1 Performance of predictor using LWR in comparison to Normal equation and Gradient Descent Algorithm with regularizer

Ans. Performance of our predictor was much better in LWR than in comparision to normal equation and gradeint descent with regularizer. But there can be a problem of overfitting in LWR as it tries to always make best possible prediction for certian range of points. Initially we stared we $\tau = 0.50$ than we tuned it by increasing the value of as it was giving less cost finally we settled at $\tau = 0.99$ which gave us the best possbile bell curve. It was also observed that exp value moved towards 1 when our $|\mathrm{X}^i - X|$ was small and it moved towards 0 when our $|\mathrm{X}^i - X|$ was large.So in LWR we got the weight function Γ^i appropirate by choosing nearby 50 points around the points for which value was to be predicted. We predicted the value of 85th data point in our algorithm and the value found was 0.7125955 and the original value was 0.59143417. So we can say that our algorithm perfomed correctly with minimal error.

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