Digit-Recognizer Project Report:

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MEG(AI-ML Track)

Algorithm used: K-nearest neighbors

The KNN algorithm makes very accurate predictions. We can use the KNN algorithm for applications that require high accuracy but that do not require a human-readable model.

In this problem, we were supposed to predict the numeral based on the given pixel data. Since sufficient knowledge is available in the given data, the KNN algorithm is suitable here where sufficient domain knowledge is available. Also, we prefer high accuracy of prediction over frequency of prediction, so this makes using KNN all the more better.

Problems encountered and solved: For employing KNN algorithm, MATLAB uses the 'fitcknn' function. The problem with this function is that it takes in only numeric data. This problem was countered by using the indexing functions of MATLAB.

Results: Results are as follows

We can see the predicted numerals for each label

Conclusion: A number the lessons were learned in this project:

- ➢ Working of KNN algorithm
- ➢ Where to use KNN algorithm
- ➢ Exploration of untouched MATLAB features

And a lot of other lessons like better code quality, prediction accuracy etc.