# CNN

## Layers

Input Layer: 1x64x64 image (Grey Scaled).

First Convolutional: 32x64x64 ([5x5] 32 Filters)

Max Pooling: 32x32x32 (2x2).

Second Convolutional: 64x32x32 ([5x5] 64 Filters).

Max Pooling: 64x16x16 (2x2).

Fully Connected NN: 64x16x16 (1024 Nodes).

Output Layer: 11 Nodes (Classes).

## Comparison

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|  | CNN | SVM |
| Weakness Points | 1. Need large Data for good Accuracy 2. Takes So many resources 3. Large number of Hyper parameters to tune. | 1. SVM is not suitable for large datasets because of its high training time 2. it also takes more time in training compared to Naïve Bayes 3. It works poorly with overlapping classes and is also sensitive to the type of kernel used. |
| Strong Points | 1. Self-Feature Extraction. 2. Run faster than KNN and SVM. | 1. SVM Classifiers offer good accuracy and perform faster prediction compared to Naïve Bayes algorithm. 2. They also use less memory because they use a subset of training points in the decision phase. 3. SVM works well with a clear margin of separation and with high dimensional space |