MAE: Mean Absolute Error it measures the average absolute difference between predicted value and the actual value.

MSE: Mean Squared Error it means the squared difference between predicted and true value.

ADAM: Adaptive Moment Estimation in which we have Momentum and RMSprop.

SGD: Stochastic Gradient Descent is gradient based optimisation parameters.

Model 1:

Feedforward neural network which have 3 dense fully connected layer and one output layer. The input layer is not explicitly defined as we are using SEQUENTIAL which actually defines the input layer depending on the type of data entry for flow. For compilation of model we are using ADAMS optimiser followed by ReLu and Linear activation function.

Model 2:

Convolution Neural Network in which we have input layer shaped as (520,1) with kernel size of 5 and filter of 64. Maxpool helps to reduce the spatial dimension of feature map by taking the max value.

Flatten layer helps to convert the 3D tensor output to 1D output. Followed by number of dense and output layer.

In convolution layer we extract features based on the filters this results in high dim output so to reduce it we use Maxpool/avgpool. THis two are feature extraction part. Passing this to fully connected dense layer where each neuron is connected to each other.

Model 3:

KNN is K-Nearest Neighbouring Regressor model that has instance based learning algorithm in which prediction is based on similarity between input datapoint and K-nearest neighbour. Smaller value of K as parameter looses details rather than higher value. This totally depends on distance metrics.

Here we select a point then we see its neigbours with distances formulation of Euclidean or Manhattan. Once distance is estimate we can now sort them based on the min-max distance and selecting a fixed number of neighbours.

ReLu range max[0, infinite)
Linear if f(x)=x
Sigmoid as (0,1)
Softmax same