Dataset:

The dataset has the following list of attributes:

Type of dependent variables (7 types of steel plates faults):

Attribute No.	Attribute
1	Pastry
2	Z_Scratch
3	K_Scratch
4	Stains
5	Dirtiness
6	Bumps
7	Other_Faults

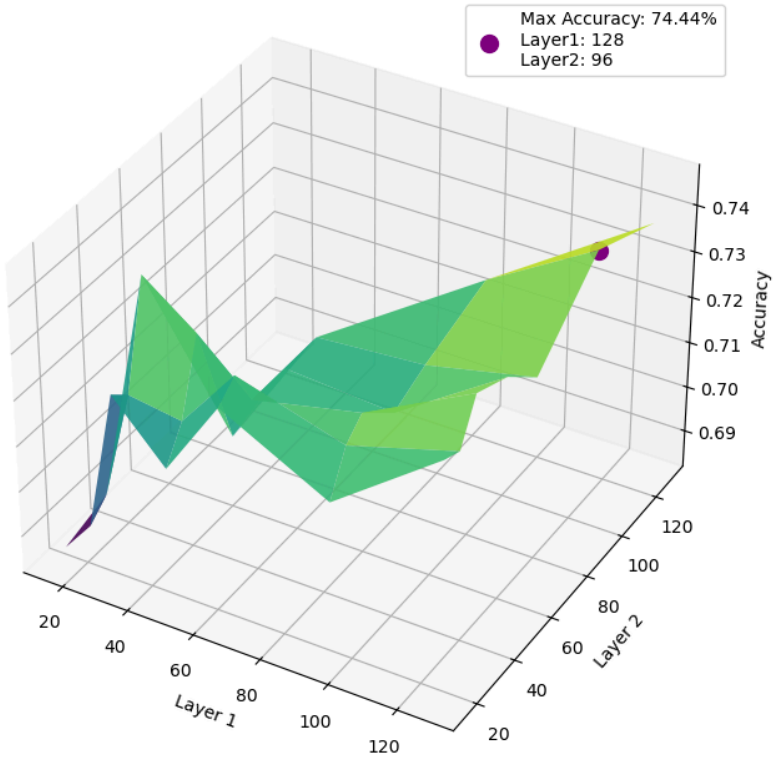
27 independent variables:

Attribute No.	Attribute	Attribute No.	Attribute
1	X_Minimum	15	Edges_Index
2	X_Maximum	16	Empty_Index
3	Y_Minimum	17	Square_Index
4	Y_Maximum	18	Outside_X_Index
5	Pixels_Areas	19	Edges_X_Index
6	X_Perimeter	20	Edges_Y_Index
7	Y_Perimeter	21	Outside_Global_Index
8	Sum_of_Luminosity	22	LogOfAreas
9	Minimum_of_Luminosity	23	Log_X_Index
10	Maximum_of_Luminosity	24	Log_Y_Index
11	Length_of_Conveyer	25	Orientation_Index
12	TypeOfSteel_A300	26	Luminosity_Index
13	TypeOfSteel_A400	27	SigmoidOfAreas
14	Steel_Plate_Thickness		

Goal: predict the type of faults in steel plates from numeric attributes only

Using TensorFlow, I explored how varying the number of neurons in two hidden layers of a neural network effects model performance. After normalizing the feature data, the model was evaluated with different neuron configurations. For each configuration, accuracy and loss data

was collected to measure performance. These were summarized and plotted to better visualize neural network performance of multi-class classification.



Optimal Configuration:

Nodes in first hidden layer: 128

Nodes in second hidden layer: 96

Test Loss: 0.1950

Test Accuracy: 0.7444