Architecture

Mushroom Classification Problem

Problem Statement:-

The Audubon Society Field Guide to North American Mushrooms contains descriptions of hypothetical samples corresponding to 23 species of gilled mushrooms in the Agaricus and Lepiota Family Mushroom (1981). Each species is labelled as either definitely edible, definitely poisonous, or maybe edible but not recommended. This last category was merged with the toxic category. The Guide asserts unequivocally that there is no simple rule for judging a mushroom's edibility, such as "leaflets three, leave it be" for Poisonous Oak and Ivy.

The main goal is to predict which mushroom is poisonous & which is edible.

Proposed Solution:-

As the data set does not provide any special feature, hence the entire 23 feature are taken to provide better accuracy without over fitting the model.
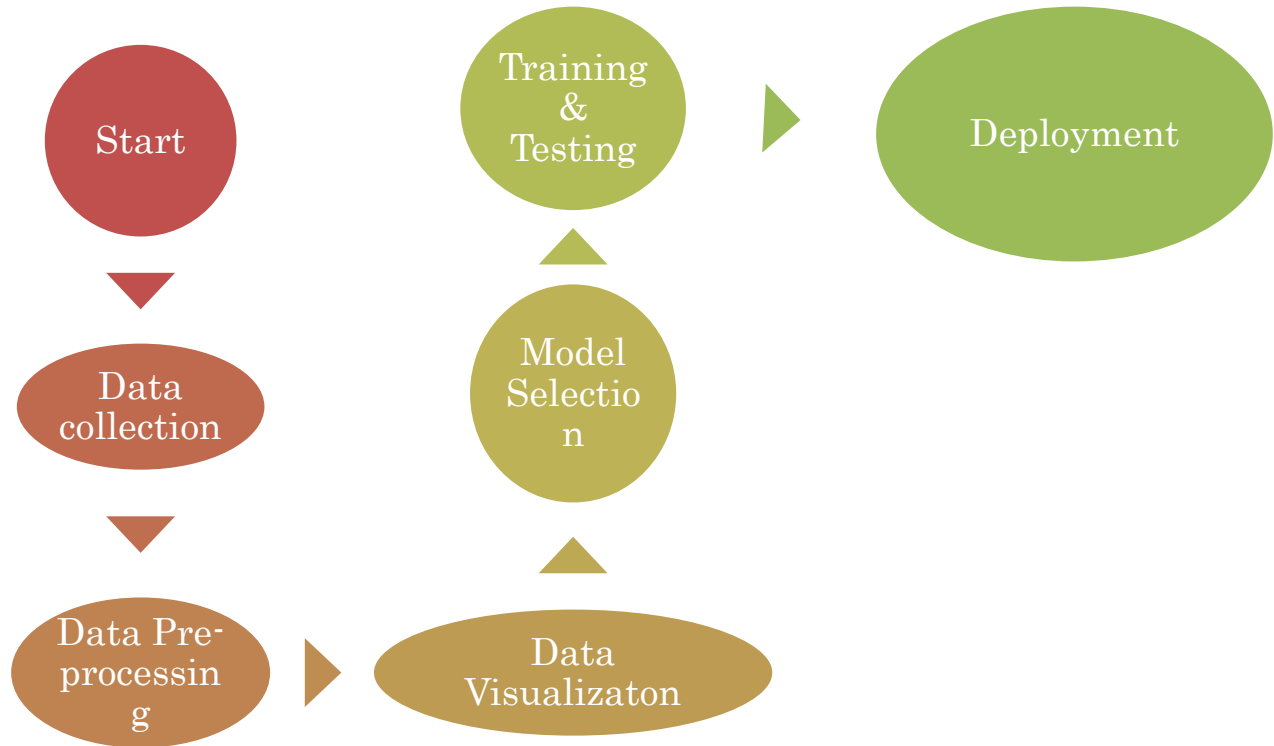
Several models are test against the data set such as logistic regression, support vector machine, decision tree, neural network etc.

At last Neural Network Model is selected to the project purpose.

Architecture:

Start ->Data Collection->Data pre-processing-> Data Visualization ->Feature Selection ->Testing Different Models to get Best Model to Use   -> Training & Testing -> Saving Trained Model Using Pickle-> Integrating trained model with the front end->Final Testing ->Resolving Minor Issues->Final Deployment(END).

Flow Diagram:-

Architecture Description:-

- ✓ Data Collection: Data is collected from the source provided.
- ✓ Data pre-processing: Data Cleaning is done.
- ✓ Data Visualization: Visualization is done to understand the data set.
- ✓ Feature Selection: Features are being selected. Testing Different Models to get Best Model to Use : As the data set does not provide any special feature, hence the entire 23 feature are taken to provide better accuracy without over fitting the model. Several models are test against the data set such as logistic regression, support vector machine, decision tree, neural network etc.
- ✓ Training & Testing: 80/20 train test is used
- ✓ Saving Trained Model Using Pickle.
- ✓ Integrating trained model with the front end.(using streamlit)
- ✓ Final Testing