

# Multi-purpose Machine Learning Tool

## ML Tool

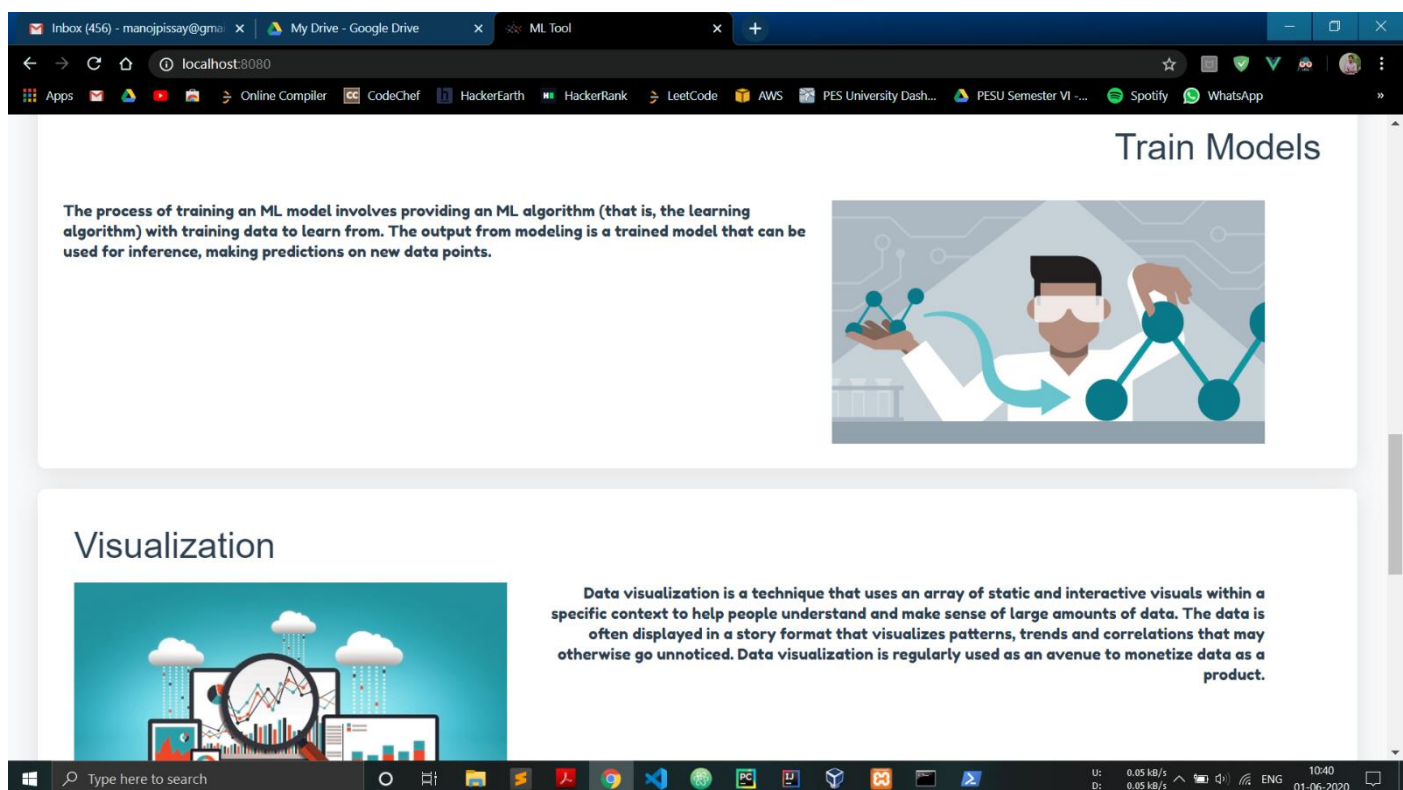
A web application tool for

- Data Pre-Processing
- Data Visualization
- ML Model Training

Frameworks used:

- Front-end Framework: Vue JS
- Back-end Framework: Flask

## Home Page:



## Dashboard:

The screenshot shows a web browser window with the URL `localhost:8080/userhome/dashboard`. The browser's address bar and tabs are visible at the top. The MLTool dashboard has a dark sidebar on the left with a logo and two menu items: "Dashboard" and "User Profile". The main content area is titled "Dashboard" and contains two primary sections. The "My Datasets" section prompts the user to "Choose a dataset from below or upload a new dataset." and lists two available datasets: `cleaned.csv` and `ml_dataset.csv`. Below this, an "Upload the dataset to train the model" section features a text input field with the placeholder "Choose a file or drop it here.", a "Browse" button, and an "Upload" button. To the right, a featured article titled "r/MachineLearning - [D] Paper GPT-3: Language Models are Few-Shot Learners (Video Analysis)" is displayed with a thumbnail image showing a bar chart and the text "OpenAI GPT-3". The Windows taskbar at the bottom shows the search bar and various application icons, with system status indicators on the right indicating the time as 10:50 and the date as 01-06-2020.

The screenshot displays the `localhost:8080/features` page of the MLTool application. The browser window shows the same tabs and address bar as the dashboard view. The features page is organized into a 2x2 grid of cards, each with an illustration and a label. The top-left card, "Pre-Processing", shows a person pouring data into a funnel. The top-right card, "Train Model", depicts a person wearing VR goggles interacting with a neural network diagram. The bottom-left card, "Visualizations", features a person analyzing data on multiple screens with a magnifying glass. The bottom-right card, "ML Information", shows a person looking at a screen with a magnifying glass over binary code. The Windows taskbar at the bottom is consistent with the previous screenshot, showing the time as 10:42 and the date as 01-06-2020.

## Pre-Processing:

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localhost:8080/features/preprocessing

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MLTool Preprocessing

Home Grid List manoj

### Data Pre-Processing

Target Column:

Not sure how to pre-process the data? [Pre-process Data](#)

Features to remove:

- ☐ Unnamed: 0
- ☐ P. Zone Class
- ☐ P. Mass Class
- ☐ P. Composition Class
- ☐ P. Atmosphere Class
- ☐ P. Mass (EU)
- ☐ P. Radius (EU)
- ☐ P. Density (EU)
- ☐ P. Gravity (EU)
- ☐ P. Esc Vel (EU)
- ☐ P. SFlux Min (EU)

Type here to search

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## ML Model Training:

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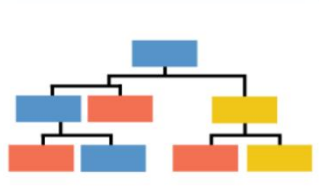
localhost:8080/features/models

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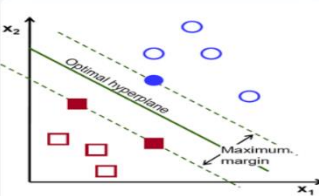
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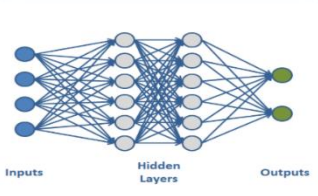
### Choose the model to train the data:




Decision Tree



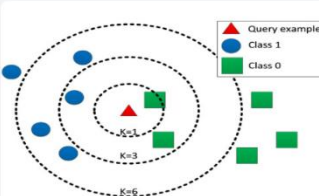
SVM



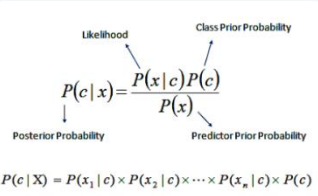
Neural Network



Random Forest



KNN



Naive Bayes

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## Parameters for a ML Model (Decision Tree)

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localhost:8080/features/models

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### Parameters for Decision Tree

Not sure what parameters to use? [Get Best Parameters](#)

Note: Below auto-filled parameters are the default values set by sklearn.

Criterion:

Splitter:

Maximum Depth of the tree: (integer)  
(If None, then nodes are expanded until all leaves are pure)

Minimum number of samples required to split an internal node:

Minimum number of samples required to be a leaf node:

Maximum number of leaf nodes (integer):  
(If None then unlimited number of leaf nodes.)

[Train Model](#)

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## ML Model Report:


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localhost:8080/features/models/model-report

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### ML Model Report

Model Chosen: **Decision Tree**



**Accuracy: 0.997309**

**Confusion Matrix: [ [ 1098, 1 ], [ 2, 14 ] ]**

**Precision: 0.933333**

**Recall: 0.875**

**f1-score: 0.903226**

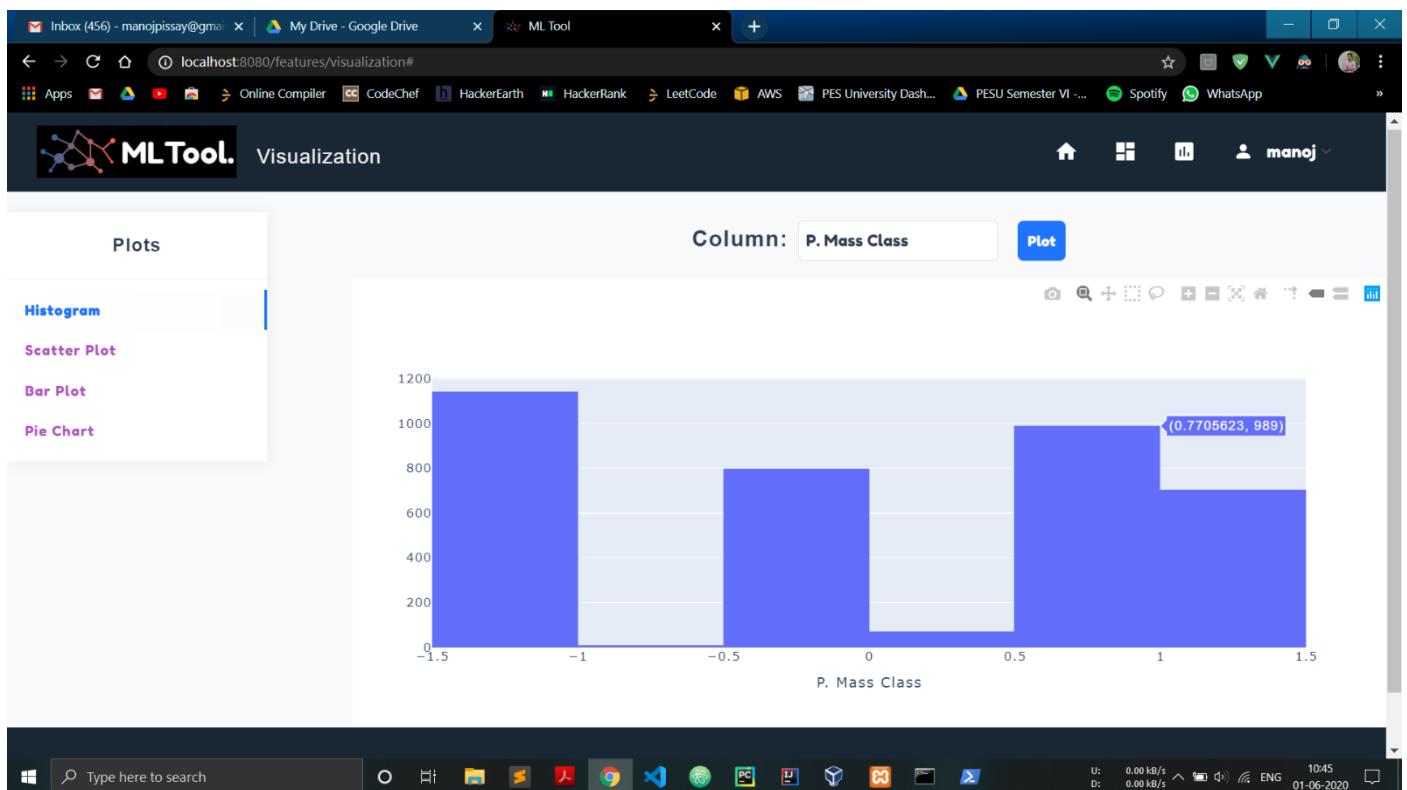
[Download Trained Model](#)

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Visualization:

Histogram:



Scatter Plot:

