ML Tool - Multi-purpose Machine Learning Tool

Full demo of the application:
https://www.dropbox.com/s/h11afe4xx6xwqtu/ML%20Tool%20Demo%20Video.mp4?dl=0

A web application tool for

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

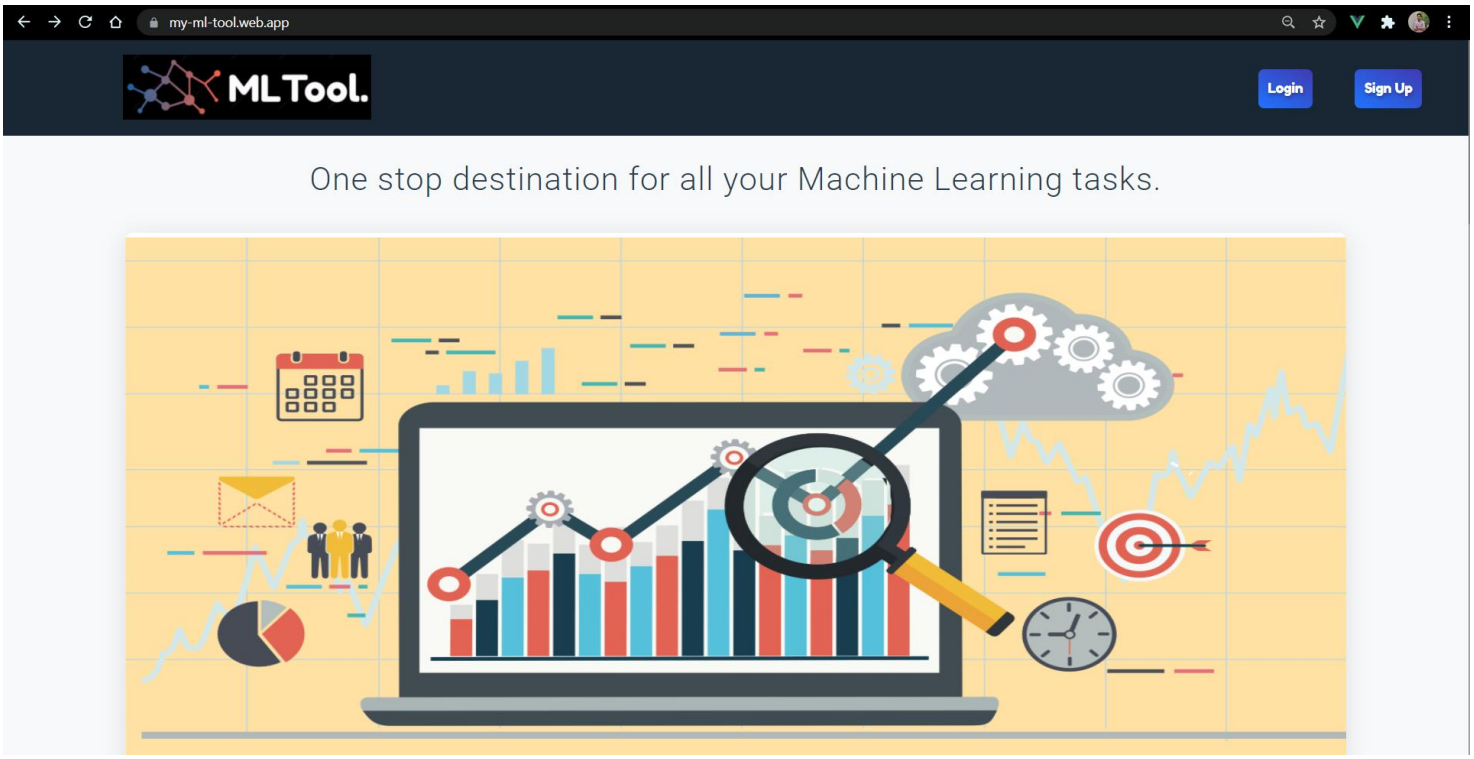
Frameworks used:

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

Novel Features:

- Option for users to pre-process the dataset automatically (if user is not sure how to pre-process data) or customise the attributes for pre-processing.
- Get best possible parameters for the ML Model. It uses Randomized Search Algorithm to get parameters using which best possible accuracy for a model can be achieved.

Homepage: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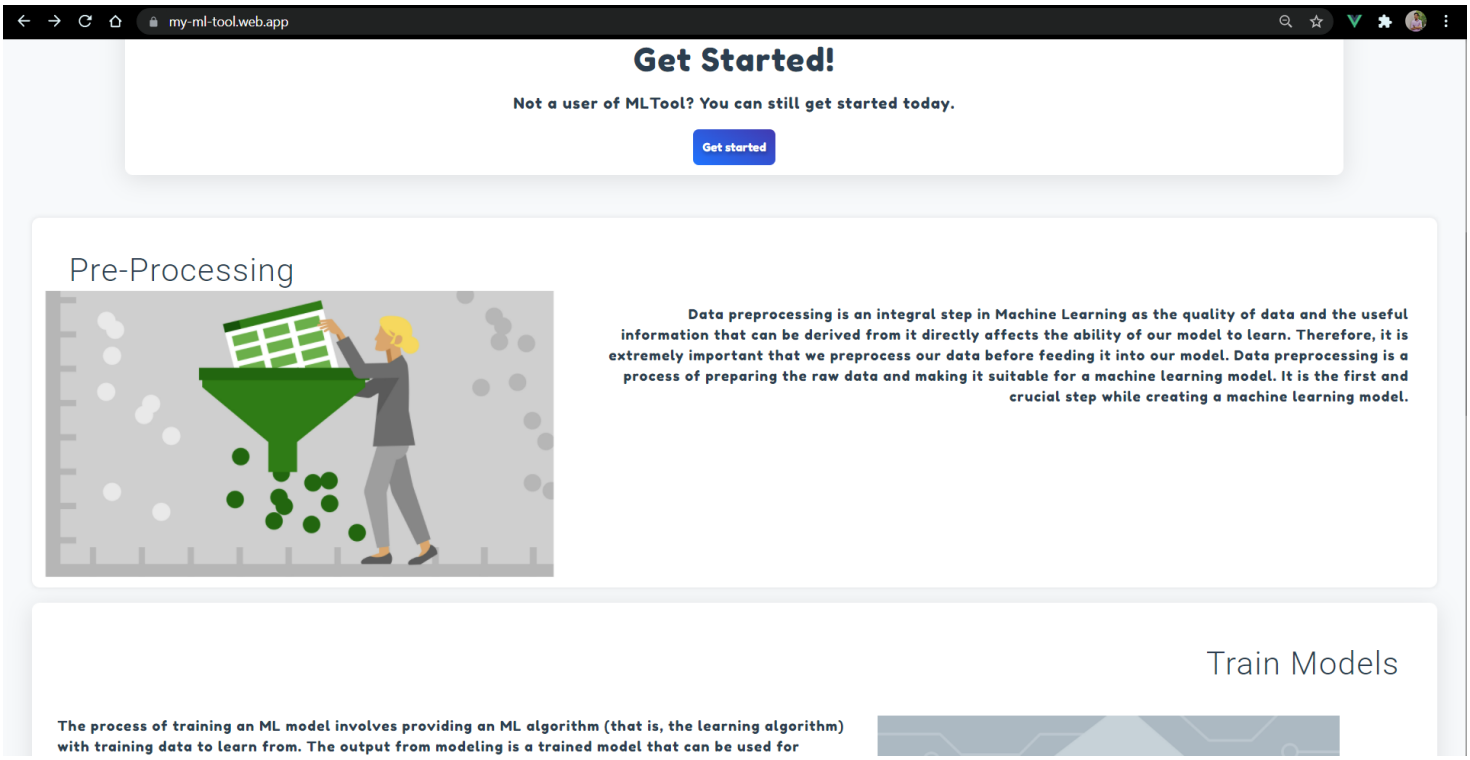
One stop destination for all your Machine Learning tasks.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Get started
Pre-Processing
Data preprocessing is an integral step in Machine Learning as the quality of data and the useful information that can be derived from it directly affects the ability of our model to learn. Therefore, it is extremely important that we preprocess our data before feeding it into our model. Data preprocessing is a process of preparing the raw data and making it suitable for a machine learning model. It is the first and crucial step while creating a machine learning model.
Train Models
The process of training an ML model involves providing an ML algorithm (that is, the learning algorithm) with training data to learn from. The output from modeling is a trained model that can be used for

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Train Models

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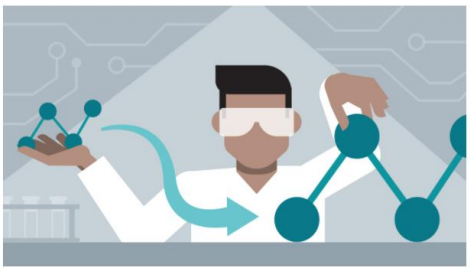

Visualization

Data visualization is a technique that uses an array of static and interactive visuals within a specific context to help people understand and make sense of large amounts of data. The data is often displayed in a story format that visualizes patterns, trends and correlations that may otherwise go unnoticed. Data visualization is regularly used as an avenue to monetize data as a product.

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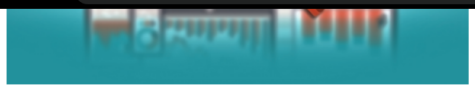

ML Information

Analytical reporting has been evolving into one of the most important business intelligence components that has compelled companies to adapt their strategies based on data-driven insights. While many companies struggle to leverage an effective business intelligence strategy, the importance of analytical information created fluctuation of data that cannot be simply collected into a single spreadsheet. It has become harder to create and use a single report and communicate a wide range of vital information between departments, stakeholders and important parties in a single company.

Scroll to top

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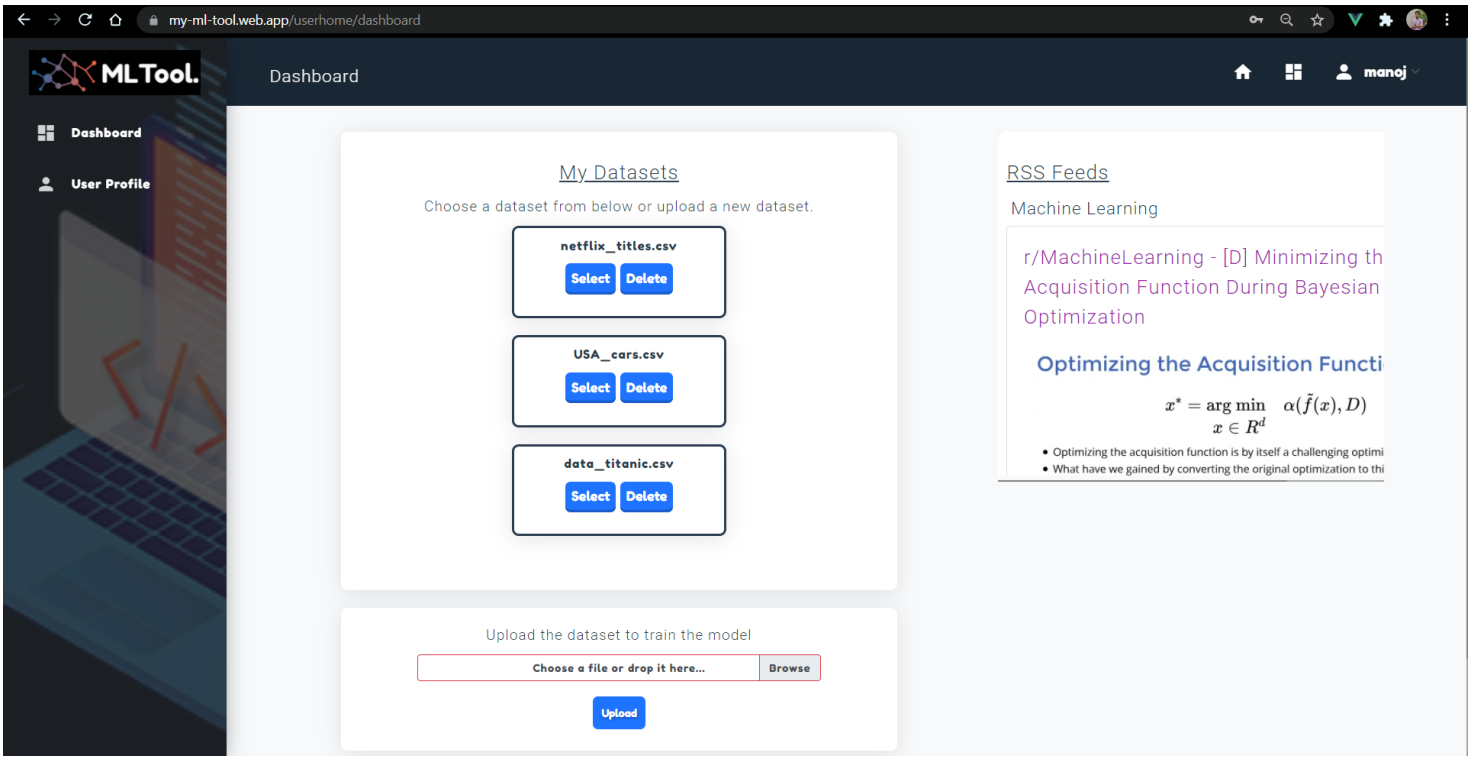
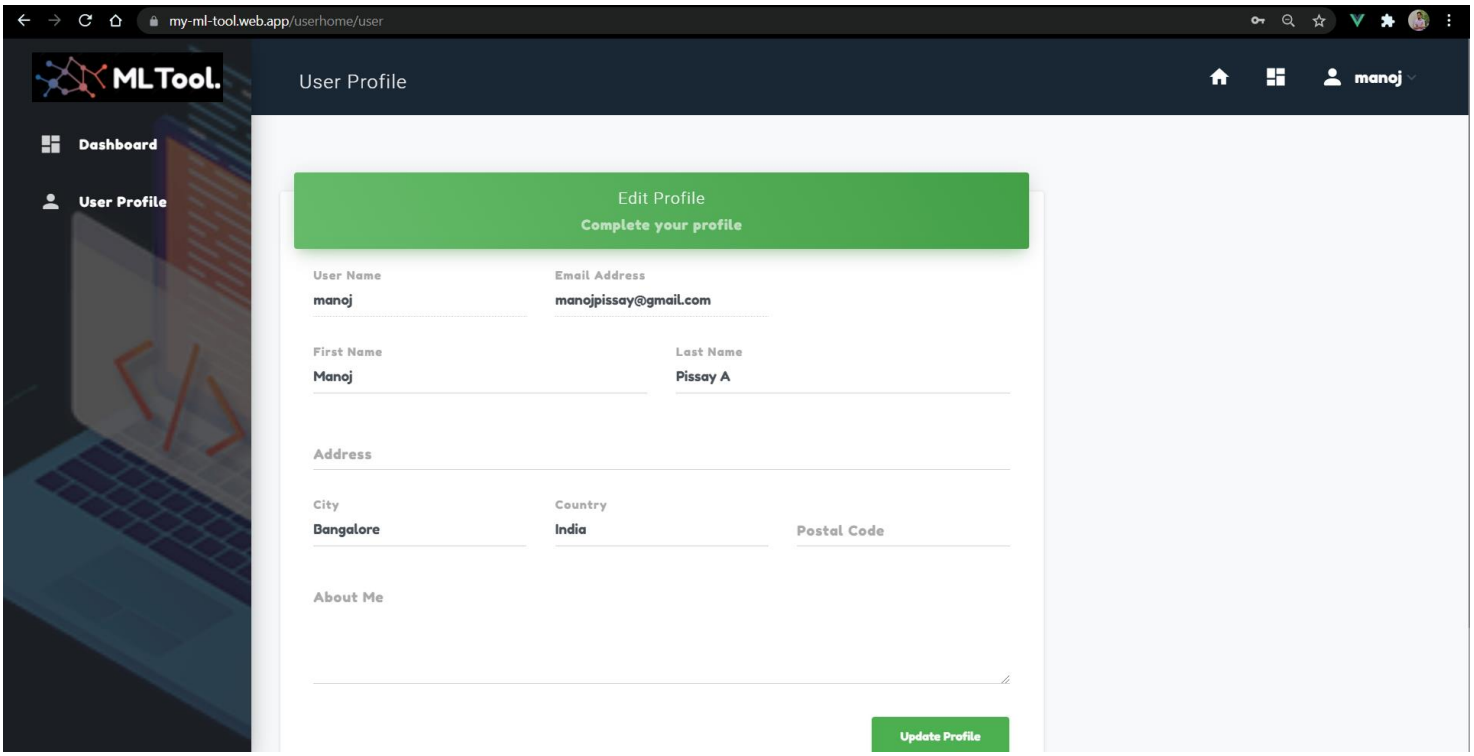
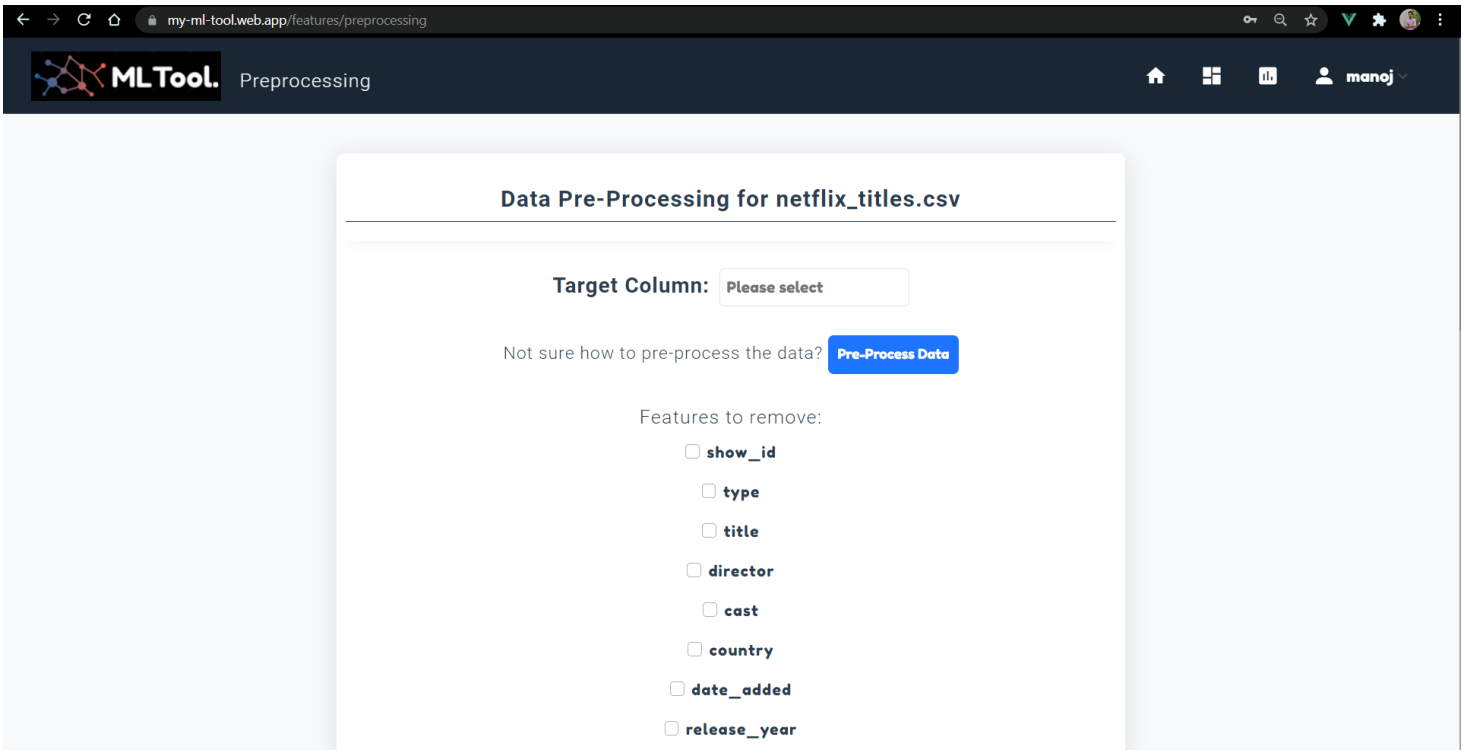
Dashboard:

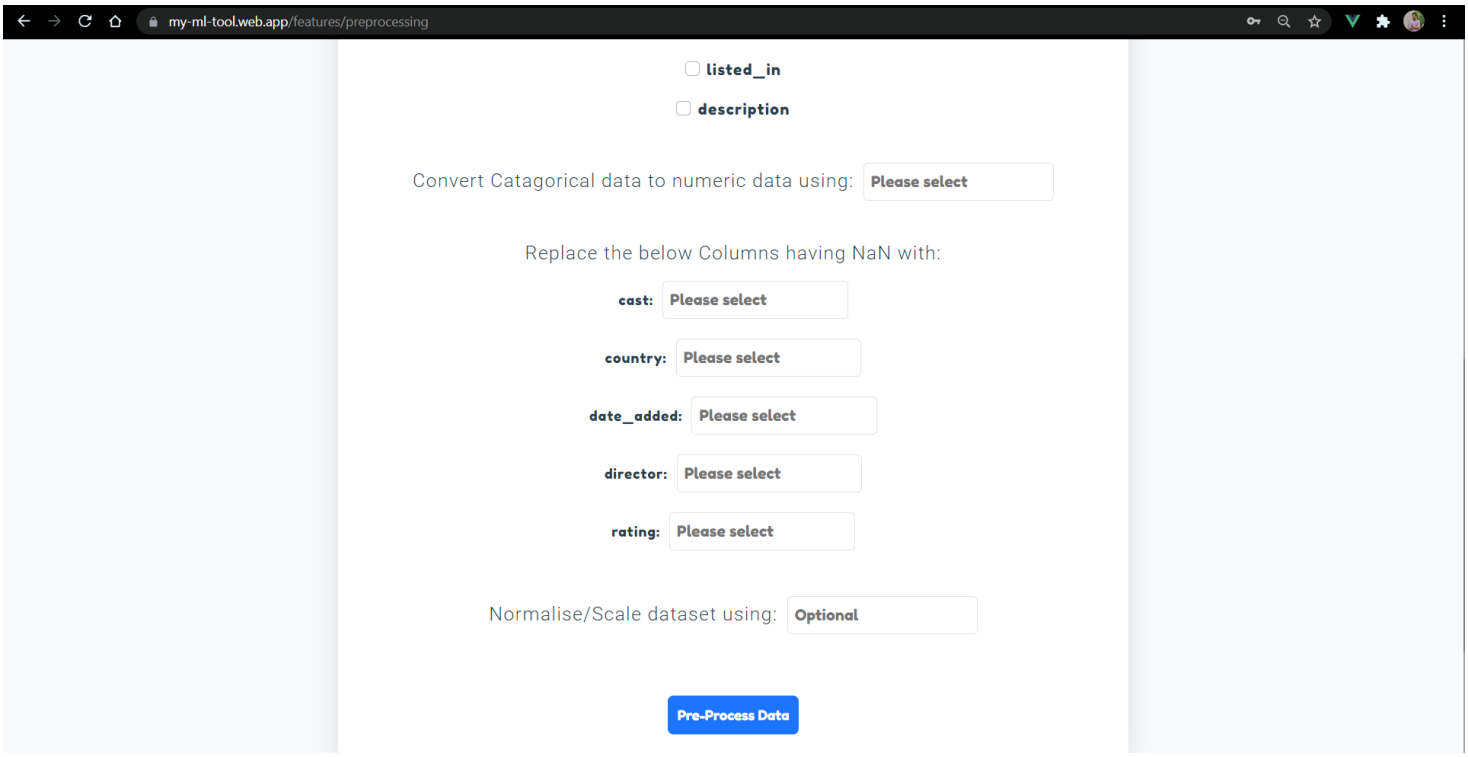


User Profile:

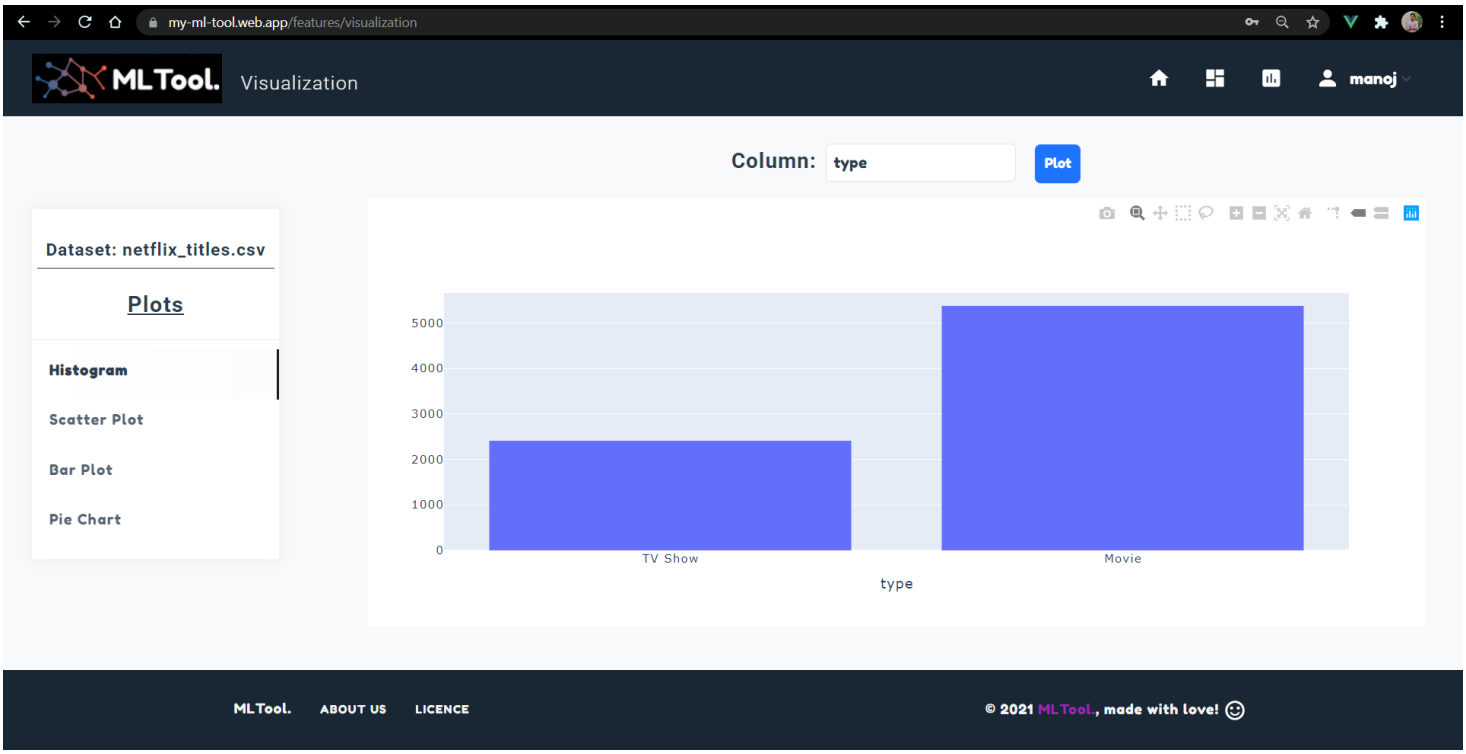


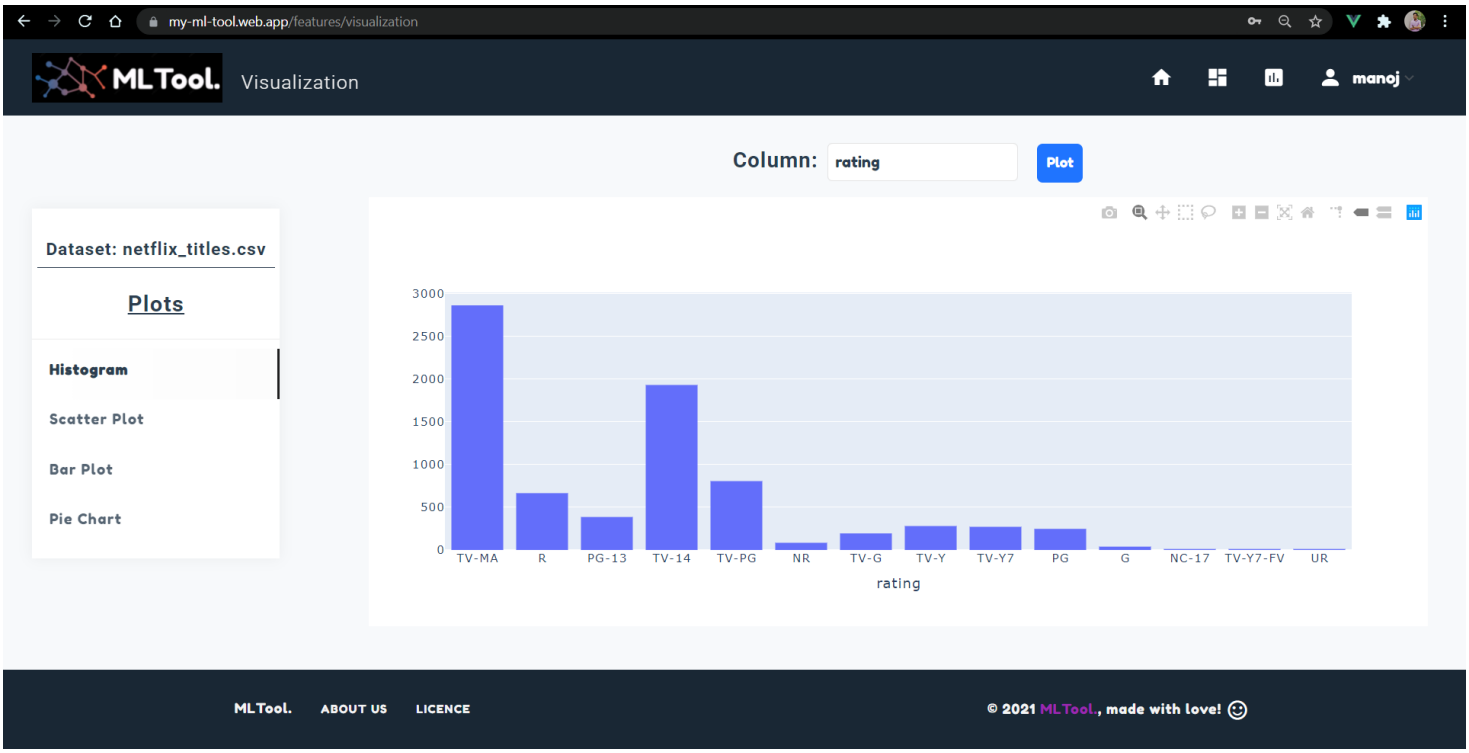
Dataset Pre-processing:





Dataset Visualization:





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MLTool. Visualization

manoj

Column: state Column: brand Plot

Dataset: USA_cars.csv

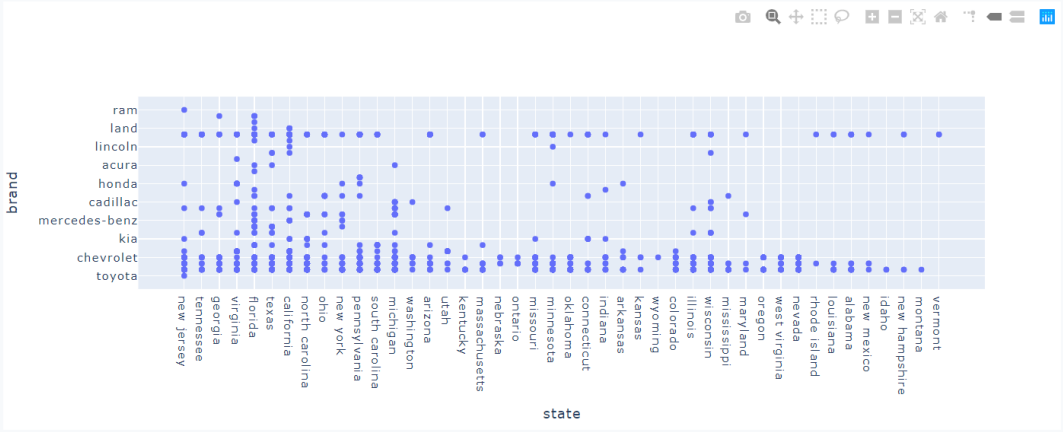
Plots

Histogram

Scatter Plot

Bar Plot

Pie Chart



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MLTool. Visualization

manoj

Column: P. Mass (EU) Column: P. Radius (EU) Plot

Dataset: habitable_planets.csv

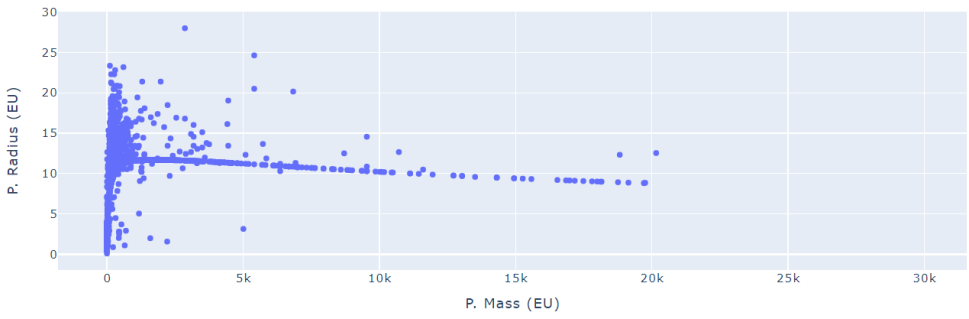
Plots

Histogram

Scatter Plot

Bar Plot

Pie Chart



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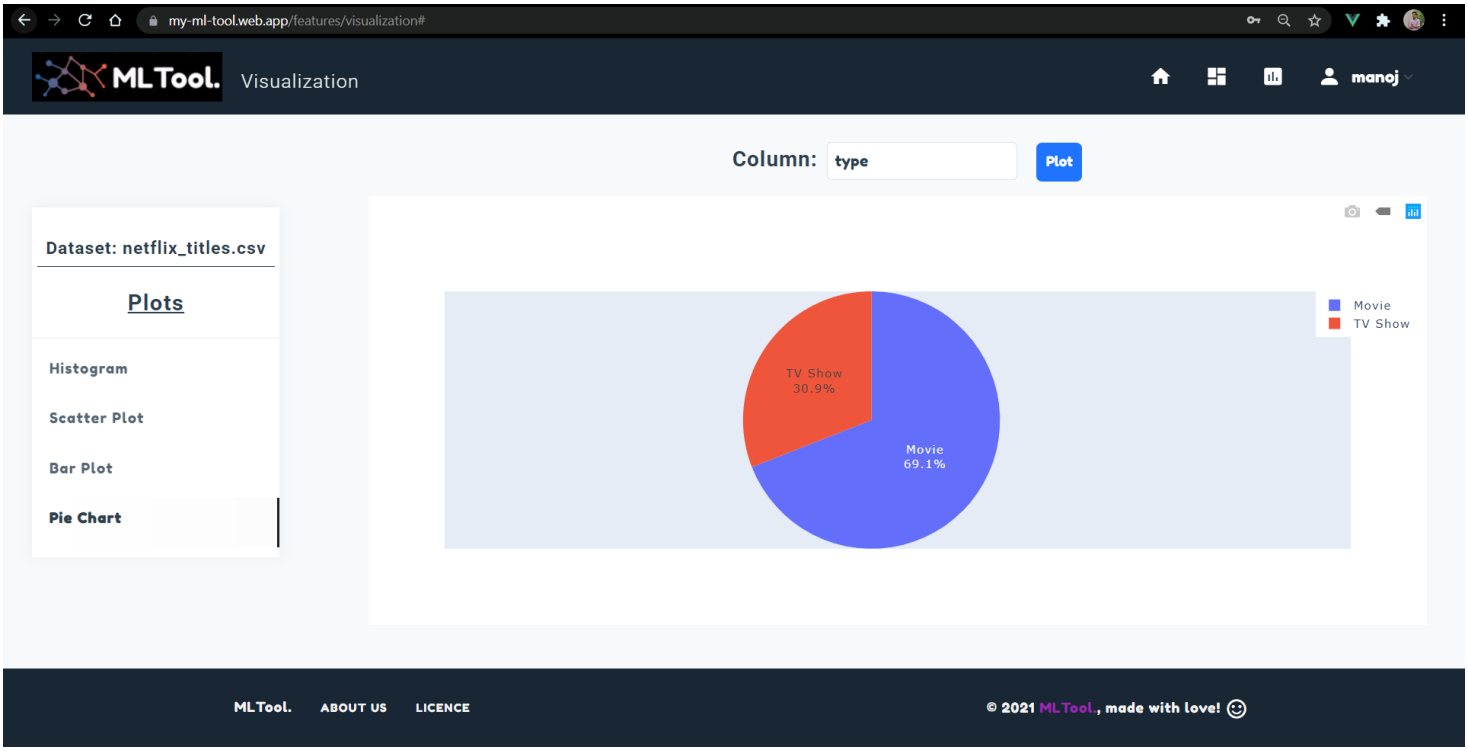
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Visualization
manoj
Column:
type
Plot
Dataset: netflix_titles.csv
Plots
Histogram
Scatter Plot
Bar Plot
Pie Chart
TV Show
30.9%
Movie
69.1%
Movie
TV Show
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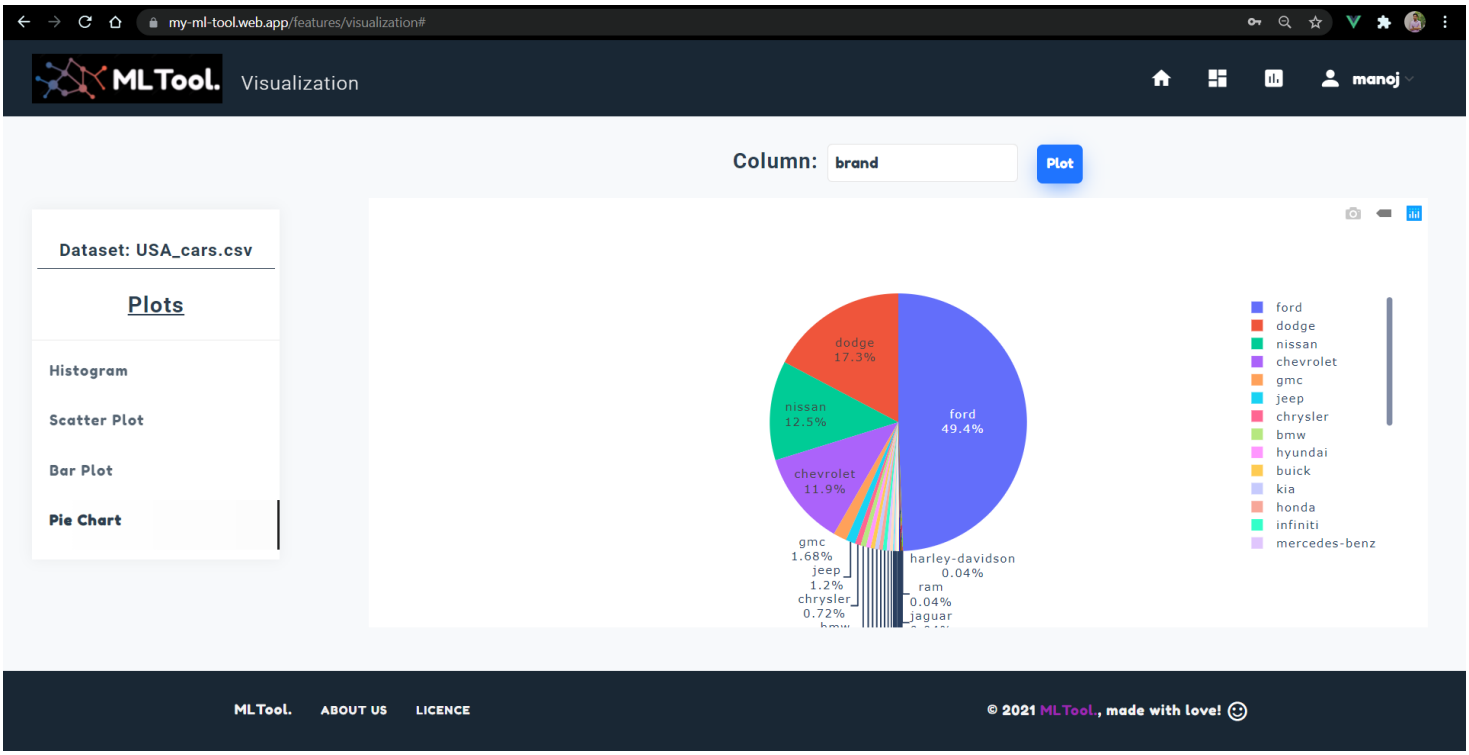
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MLTool.
Visualization
manoj
Column:
brand
Plot
Dataset: USA_cars.csv
Plots
Histogram
Scatter Plot
Bar Plot
Pie Chart
dodge
17.3%
nissan
12.5%
chevrolet
11.9%
ford
49.4%
gmc
1.68%
jeep
1.2%
chrysler
0.72%
harley-davidson
0.04%
ram
0.04%
jaguar
ford
dodge
nissan
chevrolet
gmc
jeep
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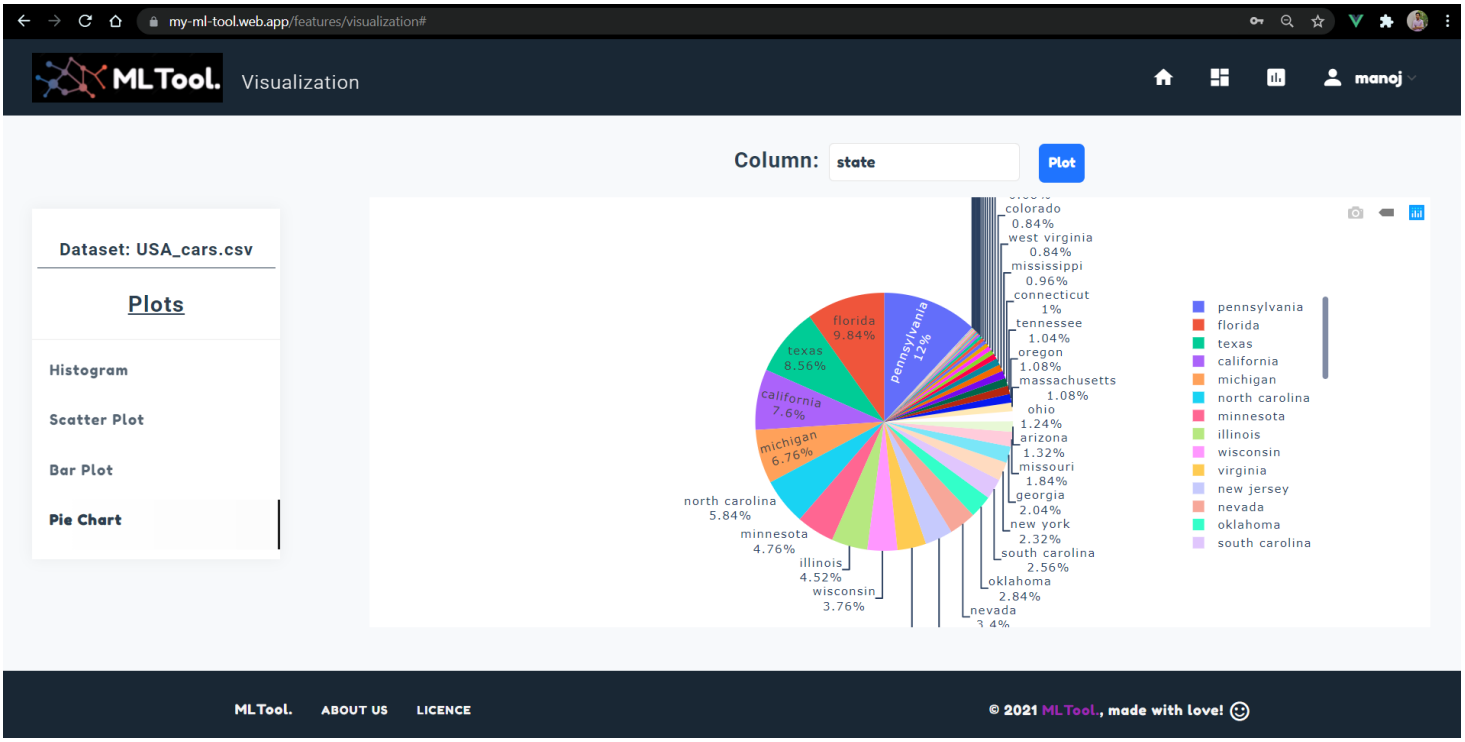
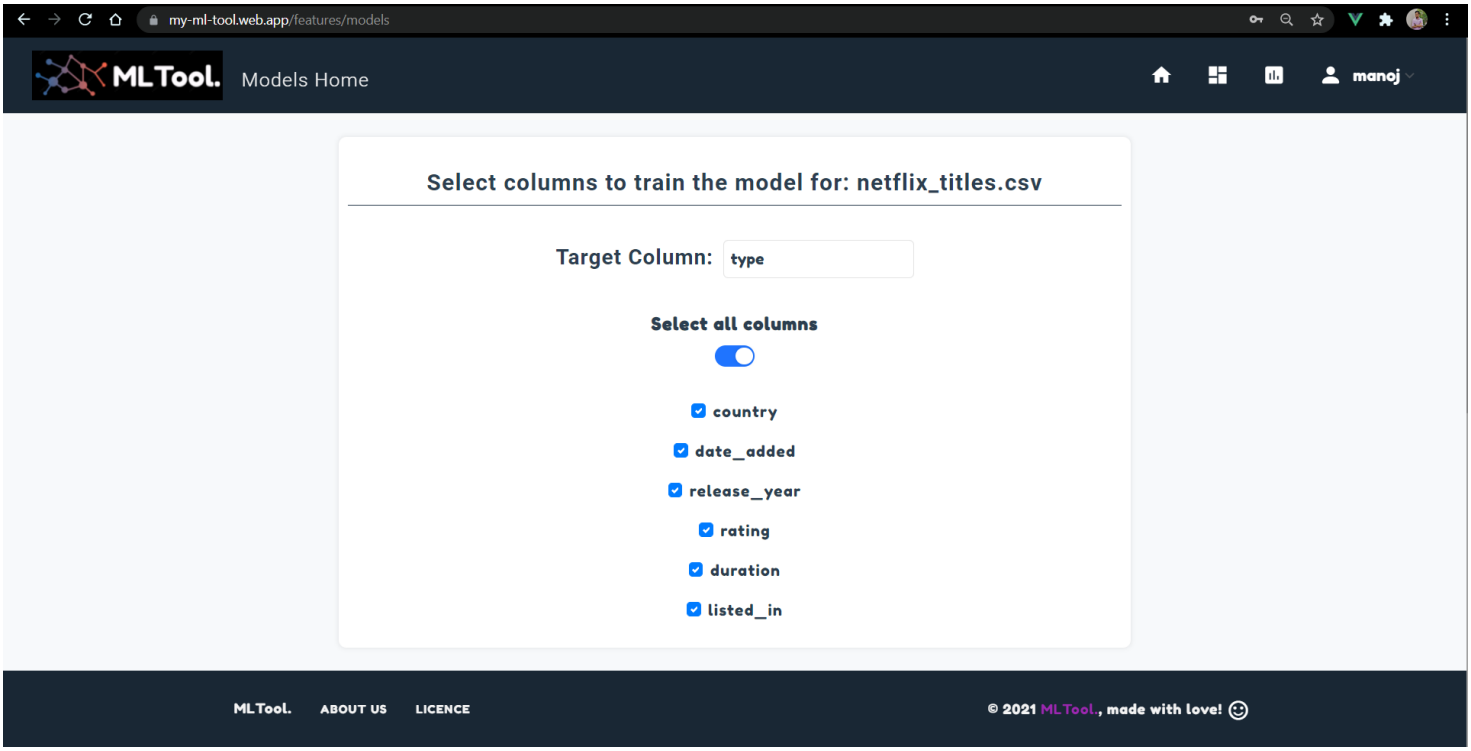


ML Model Training:



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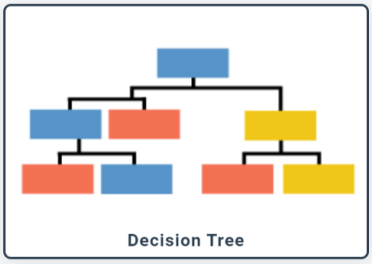
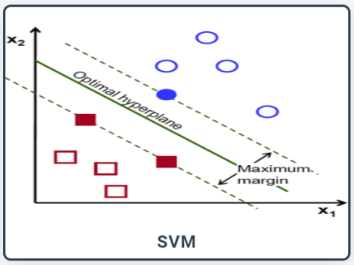
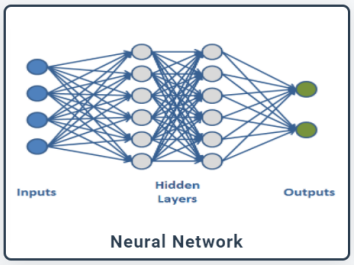
Choose the model to train the data:



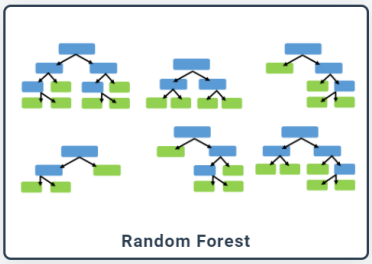
Decision Tree



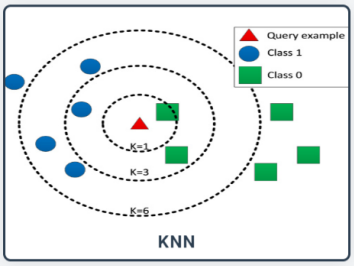
SVM



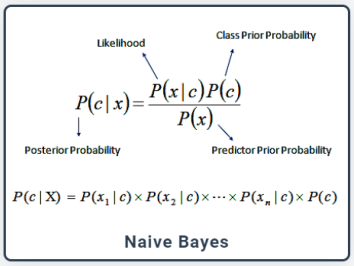
Neural Network



Random Forest



KNN



Naive Bayes

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Parameters for Decision Tree

Not sure what parameters to use? Get Best Parameters

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

Criterion:
Gini

Splitter:
Best

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

Minimum number of samples required to split an internal node:
2

Minimum number of samples required to be a leaf node:
1

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

Train Model

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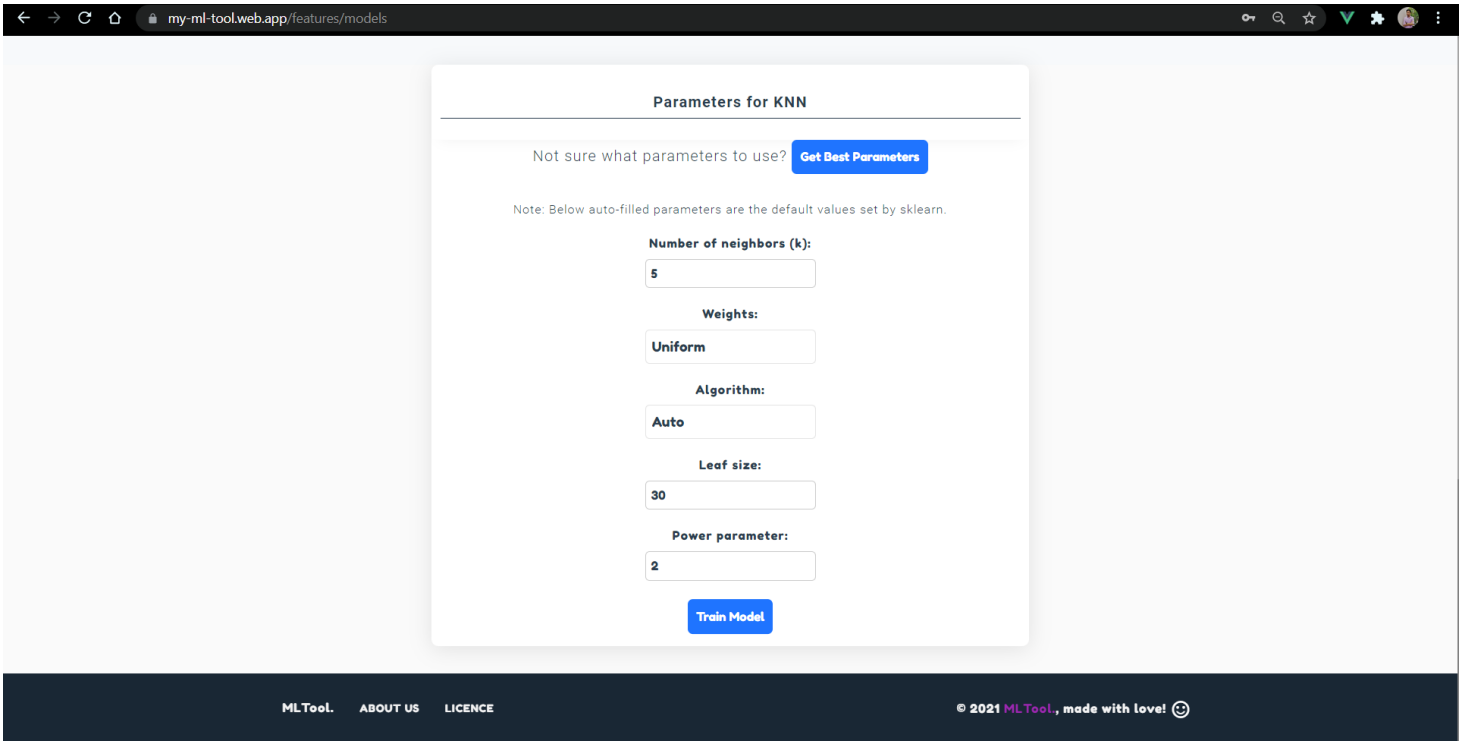
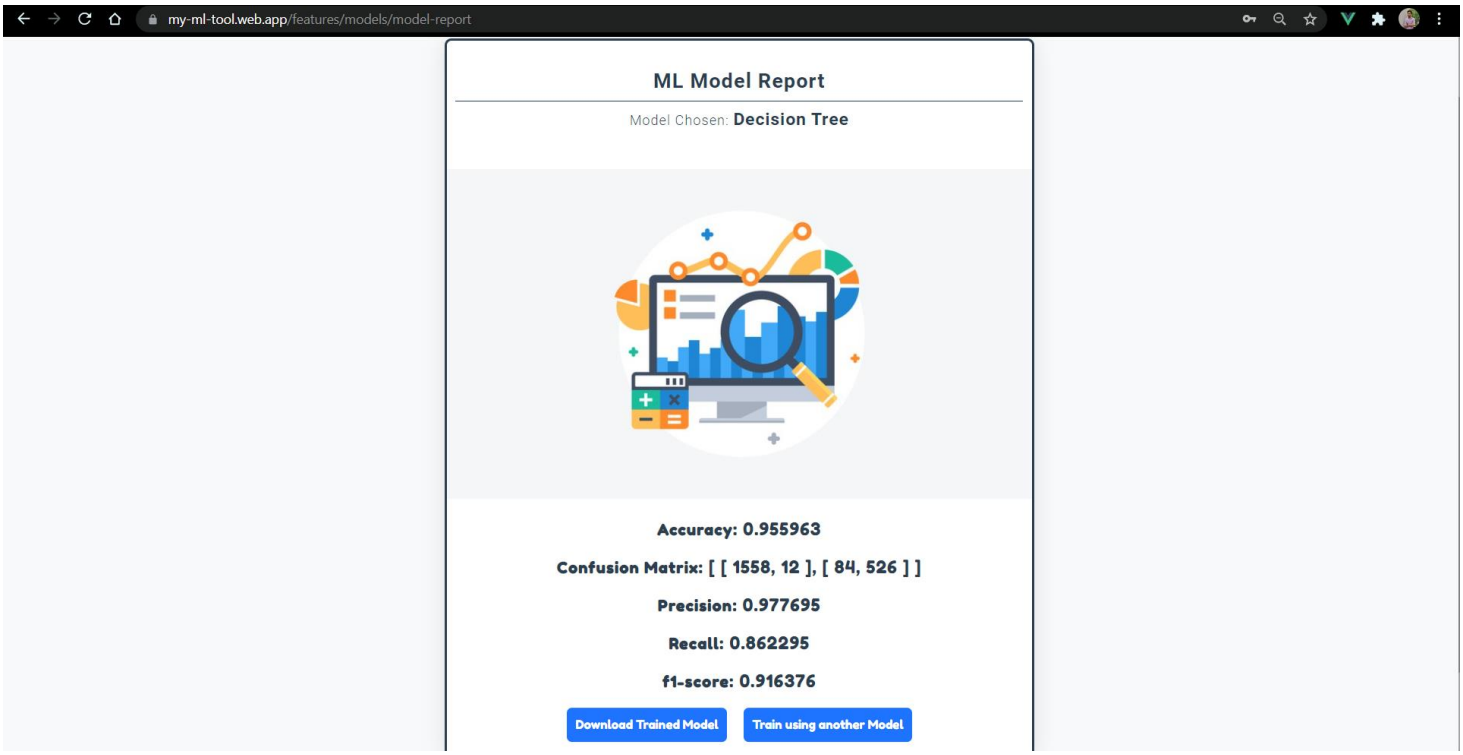
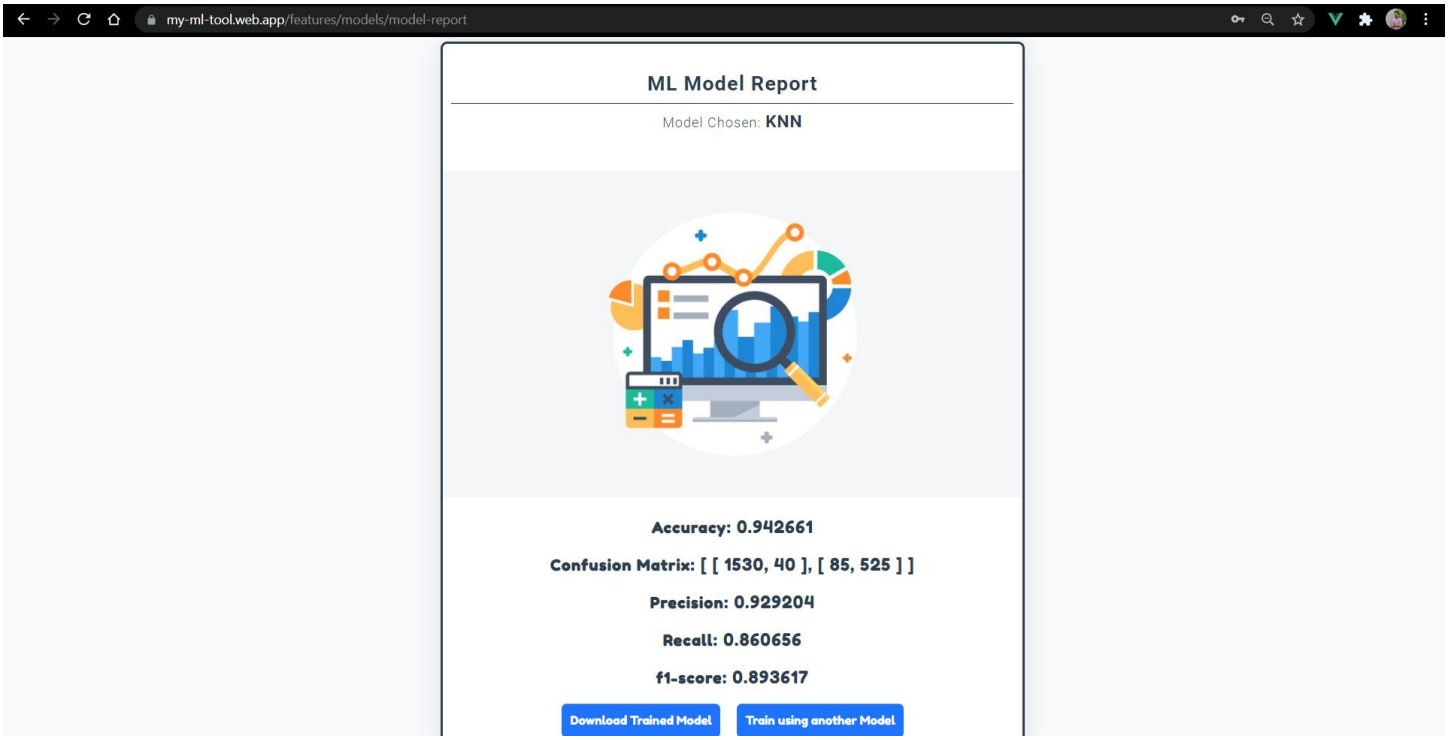


ML Model Report:





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