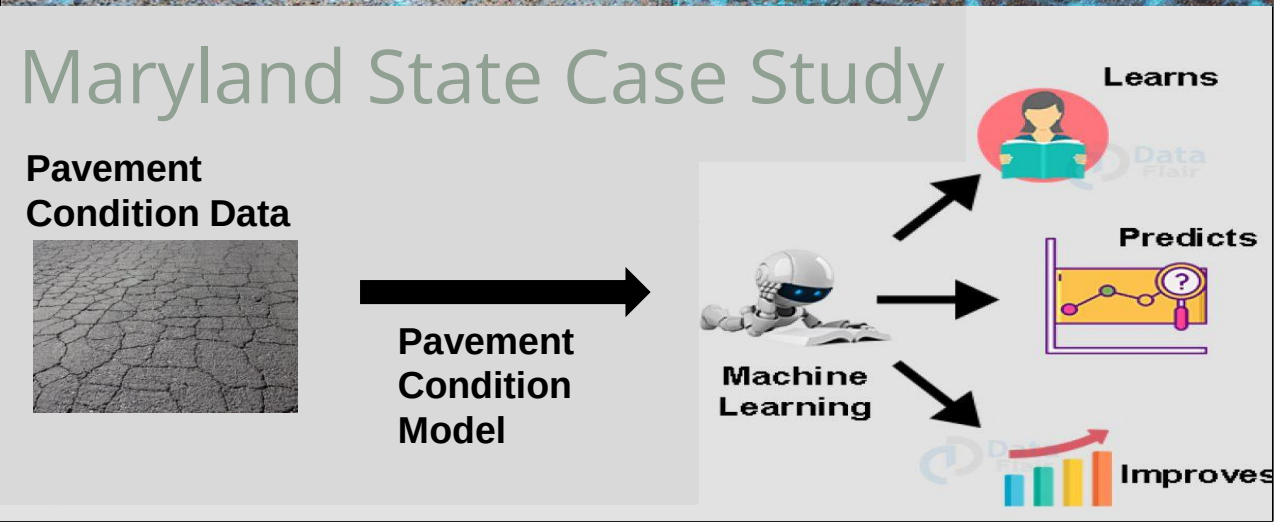
Pavement Condition Prediction Model Using Classification Algorithms



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Pavement Condition Prediction Model

Government agencies are spending millions of $$$ on pavement condition inspections with field equipment. We aim to help reduce the cost and effort of the field inspection by developing Machine Learning Model for the Pavement condition which will predict the condition of the pavement based on the specific attributes such as Traffic, Age without going in the field using historical data.

Relevance to City of Montreal

While keeping City of Montreal in mind. we are developing a Supervised Machine Learning Model using Classification techniques to predict the pavement condition with reasonable accuracy and with minimum input data. Currently, City of Montreal does not have such model in place, and we aim to fill that gap in order to save City of Montreal $$$ and increase road network performance.

Supervised Machine Learning Modelling

The project scope involves,

- Processing of Maryland State pavement data collected from the Open Data Source to understand the characteristics of the pavement network and nature of the data.
- Identifying key input and out put attributes for the model. In this Case Study, Traffic, Material Type, Surface Type and Road Class were identified as input variables and Rutting (Pavement Deformation in inches) as output variables.
- The processed data will be trained in Supervised Machine Learning model development and after testing a prediction model will be deployed.

Outcomes & Recommendations for City of Montreal

- Pavement Condition Prediction Model specific for Maryland State
- Time and $$$ savings for the government agency
- Increased performance of the pavement network
- Guidelines and Recommendations for similar model for City of Montreal