



28 - Traffic Relations

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Questions to Answer:

- Which type of road requires more attention in order to handle traffic volume control?
- Does the time of year have an influence on the volume of traffic?
- During what time of day is there the most/least volume of traffic on average?
- Does the road being rural or urban have an effect on these questions' answers?



Data Preparation

- **Data Cleaning:**
 - Had to remove attributes that are “useless”
- **Data Reduction:**
 - Python program that user edits to clean out what they want
- **Data Transformation:**
 - Output a csv file with desired clean set

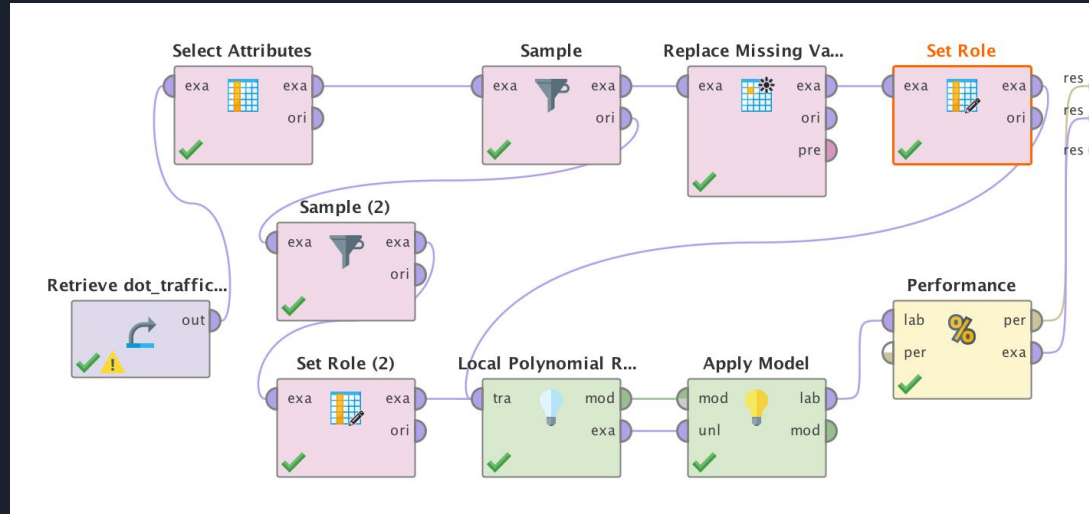


Tools Used

- RapidMiner
 - Easy to use data mining tools
- Python
 - Jupyter Notebook
 - Libraries: numpy, pandas, matplotlib, scikit-learn
- Github
 - Project tracking and collaboration

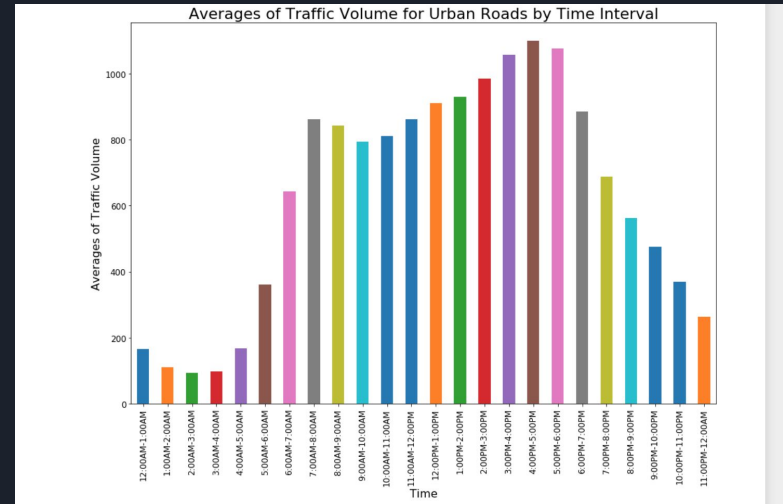
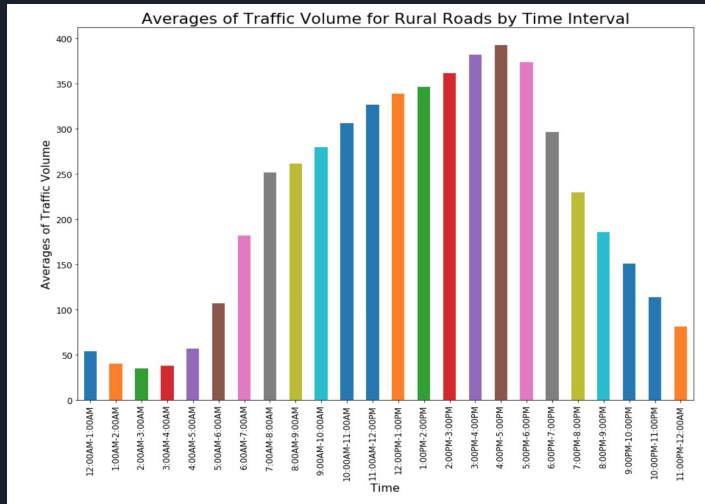
Techniques Applied

- Clustering/Outlier analysis
 - Tried to use clustering/outliers to find groups of high traffic times by month
- Regression Model (RapidMiner)



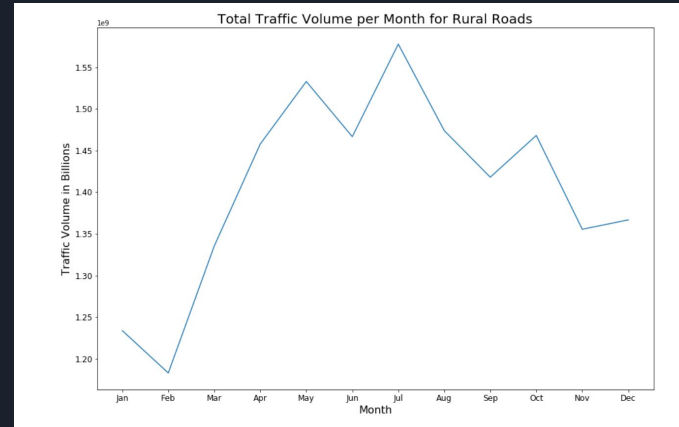
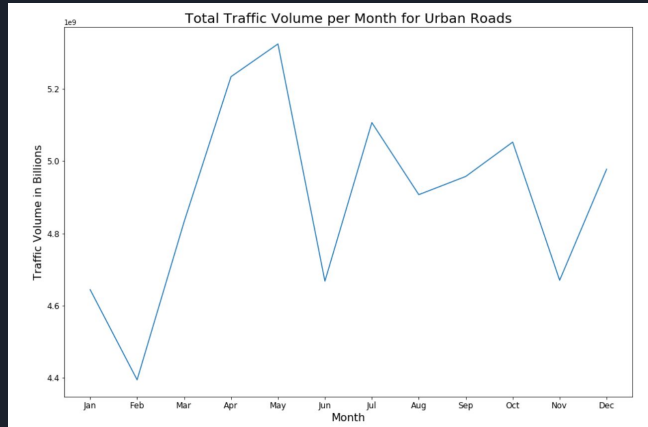
Knowledge Gained

- Both urban and rural roads largest traffic volume on average happens between 4:00PM-5:00PM, urban roads handle a lot more volumes of traffic



Knowledge Gained

- Urban Roads: High traffic: Spring | Low traffic: Winter
- Rural Roads: High traffic: Summer | Low traffic: Winter





Applications

- Can move construction dates to winter since less people drive then.
- Can ensure no construction occurs between noon and 6 PM, since that's when the road is busiest.
- Traffic control to accommodate to high traffic volumes
 - Look at other attributes
- Gives insight for people's daily commutes
 - How to minimize car trips to maximize work
- Use the regression model to further predict the future traffic patterns for planning