Ahmedabad University

CSE-523 Machine Learning

Weekly Report-3

<u>Project Title : Use fuzzy logic to find direction of motion of a vehicle.</u>

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Summary:

Following a previous week of learning and preparing a strong base about the principles of fuzzy logic and its application in vehicle prediction, our focus has shifted towards finding an appropriate dataset. The dataset is the most important thing in machine learning and used for training and validating predictive models that utilize fuzzy logic for vehicle behavior prediction in our case.

Activities:

Review of Requirements:

- We revisited the requirements outlined during our initial discussions and presentation regarding the dataset needed for vehicle prediction. These requirements include variables such as vehicle speed, coordinate (x,y), weights.

Identification of Potential Sources:

- We tried to search for suitable datasets by exploring various sources, including public repositories from github and kaggle, academic databases, and government agencies. Our aim is to identify datasets that satisfy the necessary attributes and are relevant to our predictive modeling objectives.

Evaluation Criteria:

- To ensure the quality and relevance of the selected dataset, we established a set of evaluation criteria (mainly from the research paper we reviewed). These criteria include data integrity, size, diversity, temporal relevance, and compatibility with fuzzy logic-based modeling techniques.

Data Collection and Preliminary Analysis:

- We initiated the process of collecting data sets meeting our criteria and got two of them, however we decided to keep them as a backup option as they are not satisfying all criterias

Collaboration and Feedback:

- Collaboration among team members and across the other group having the same problem statement continues to be integral to our progress. Finally we got help from Yagnik Bhavsar who helped us by giving some relevant links and also with the data set having exactly the same attributes we were looking for.

Next Steps:

- Preprocessing and Cleaning: Upon acquiring the datasets, we will undertake preprocessing and data cleaning tasks to enhance data quality and readiness for subsequent analysis and modeling.
- After that we will find the value of theta as we have discussed with Yagnik Bhavsar.

Conclusion:

As we transition into the second week of our research project, our primary focus was on identifying and acquiring an appropriate dataset for vehicle prediction modeling. After surfing a lot we finally have one proper dataset at the end of week. Now confident enough to form a model having meaningful insights and accurate predictions using fuzzy logic-based approaches.