Ahmedabad University

Weekly Report 1

Group : MLcops

Course: Machine Learning

Instructor: Prof. Mehul Raval

Project: Classification of Drivers Based on Driving Patterns

Group Members

Roll Number	Name
AU2140164	Deeprajsinh Gohil
AU2140111	Raiyan Diwan
AU2140101	Tejas Pansuriya
AU2140186	Vats Patel

Objective: This week's objective was to begin the literature review process by identifying relevant research on classifying drivers based on their driving patterns using machine learning techniques.

Progress:

- **Search Conducted:** A literature search was conducted using various academic databases and search engines, including [Google Scholar], [ACM Digital Library], and [IEEE Xplore].
- **Keywords Used:** "driving pattern classification," "driver behavior analysis," "machine learning for driver behavior," "time series classification," "risk assessment in driving."
- **Relevant Papers Identified:** Several relevant research papers were identified and reviewed. These papers explored various aspects of driver classification, including:
  - Different driving patterns used for classification (e.g., acceleration, braking, lane changes).
  - Machine learning algorithms employed for classification (e.g., support vector machines, random forests, recurrent neural networks).
  - Techniques for handling time series data in the classification process.

Key Findings:

- There is a significant body of research on using machine learning to classify drivers based on their behavior.
- Common driving patterns used for classification include acceleration, braking, steering, and lane changes.
- Various machine learning algorithms have been successfully applied, with recurrent neural networks showing promise for time series data.

Next Steps:

- Continue to review identified papers in more detail.
- Analyze the strengths and weaknesses of different approaches used in existing research.
- Identify potential gaps in the current research that this project could address.
- Refine the search strategy to target more specific aspects of the problem statement.

Challenges Faced:

- The vast amount of research available can make it difficult to identify the most relevant papers.
- Understanding the technical details of different machine learning algorithms

Overall:
A good start has been made on the literature review. By continuing to explore existing research and identifying areas for improvement, this project can contribute valuable insights to the field of driver behavior classification.