Assignment 2 DATA SCIENCE

How a Machine Learning Model for Traffic Accident Analysis Can Help Underdeveloped Countries.

1.**Proactive Accident Prevention**

- Predicts high-risk areas and accident-prone times.

- Enables authorities to issue early warnings to drivers.

- Helps enforce dynamic speed limits based on real-time conditions (e.g., reducing speed limits during heavy rain).

2. **Optimizing Traffic Management & Infrastructure**

- Identifies accident hotspots for better road planning.

- Supports smart traffic control systems that adjust speed limits dynamically.

- Helps prioritize road safety investments, such as street lighting in high-risk areas.

3. **Efficient Emergency Response**

- Predicts accident-prone locations to position ambulances strategically.

- Improves hospital preparedness by anticipating peak accident times.

- Enables better resource allocation for emergency services.

4. I**mproving Road Safety Education & Policies**

- Provides data-driven insights for awareness campaigns (e.g., educating drivers on misty weather risks).

- Supports the introduction of stronger traffic laws based on accident patterns.

- Encourages safety regulations, such as mandatory helmet laws for motorcyclists in high-risk conditions.

5. **Affordable & Scalable Implementation**

- Can utilize mobile phone data and GPS sensors for real-time tracking.

- Cloud-based AI solutions make it accessible without expensive infrastructure.

- Encourages collaboration between traffic authorities, hospitals, and data analysts to improve accuracy.

6 Saving Lives & Reducing Economic Losses

- Helps reduce traffic-related fatalities and injuries.

- Minimizes accident-related healthcare costs.

- Improves transportation efficiency, boosting economic productivity.