GITAM (Deemed to be University)
Bengaluru Campus
Department of Computer Science and Engineering
Project Title: **Usage-Based Insurance (UBI) for Automobiles Using AI/ML**

Abstract

The project "Usage-Based Insurance (UBI) for Automobiles Using AI/ML" explores a data-driven insurance model that calculates premiums based on individual driving behavior. By collecting real-time telematics data, including speed, mileage, and braking patterns, the system employs AI/ML algorithms to assess risk and generate personalized insurance rates. This approach rewards safe driving habits, enhances road safety, and reduces environmental impact.

Introduction

- UBI leverages telematics data from vehicles to offer personalized insurance premiums based on individual driving behavior, promoting safer driving and reducing insurance costs.
- By applying machine learning techniques like linear regression, logistic regression, and random forest, UBI systems analyze driving patterns and create personalized risk profiles, enabling more accurate premium calculations.

Identification of tools/algorithms/technologies

Tools:
Pandas, Scikit-learn, Telematics Devices
Algorithms:
Linear/Logistic Regression, Random Forest
Technologies:
GPS/Navigation, Telematics Systems, Data Analytics Tools

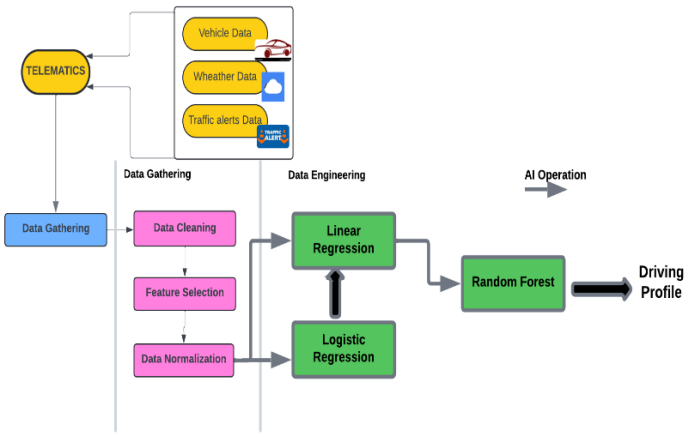
Requirement Analysis

Functional Requirements:
- Data Collection
- Data Preprocessing
- Driver Scoring Model
- Premium Calculation

Non-Functional Requirements:
- Accuracy
- Scalability
- Security

Data Requirements:
- Telematics Data
- Historical Driving Data
- User data
- Sensor Data

Design Strategies



Objective

The main objectives of this project are:
- Personalized Pricing
- Risk Assesment
- Fraud Detection
- Claims Management

Conclusion

- The UBI system provides accurate risk evaluations and personalized insurance premiums based on individual driving behavior through real-time telematics and historical data.
- Ultimately, the integration of AI/ML technologies in UBI fosters a more transparent and competitive insurance market, benefiting both insurers and policyholders.

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