Traffic Accident Analysis Using Machine Learning

Overview

This project analyzes traffic accident data using machine learning techniques. The goal is to identify factors that influence accident occurrences and develop a predictive model to assist in accident prevention strategies.

Project Structure

```
├── data/                # Contains datasets used for training and evaluation
│   └── traffic_accidents.csv
├── notebooks/           # Jupyter notebook for data exploration and model training
│   └── traffic.ipynb
├── README.md            # This README file
```

Setup

Clone the repository:

```
git clone https://github.com/your-username/traffic-accident-ml.git
cd traffic-accident-ml
```

1.

Run Jupyter Notebook:

```
jupyter notebook notebooks/traffic.ipynb
```

2.

Usage

- The dataset (`traffic_accidents.csv`) is loaded and analyzed for patterns.
- The notebook (`traffic.ipynb`) includes data visualization, preprocessing, and machine learning model training.
- Results are evaluated using various performance metrics.

Data

The dataset contains historical traffic accident records with features such as:

- Date and time of accidents
- Location details
- Weather conditions
- Road conditions
- Other relevant traffic-related factors

Machine Learning Approach

- Data cleaning and preprocessing
- Exploratory Data Analysis (EDA)
- Feature selection and engineering
- Training a predictive model (e.g., Linear Regression, Decision Trees, etc.)
- Model evaluation using metrics such as accuracy and RMSE

Contributing

1. Fork the repository.
2. Create a new branch (`git checkout -b feature/new-feature`).
3. Make modifications and commit changes (`git commit -am 'Add new feature'`).
4. Push to the branch (`git push origin feature/new-feature`).
5. Create a Pull Request.

License

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Contact

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