

AUTO-CLAIM CAR INSURANCE USING IMAGE PROCESSING

Idea Description

One of the crucial steps in filing a claim for auto insurance after an accident is determining the extent of the damage to the vehicle. Damage detection is typically a process carried out by the insurance company by dispatching a surveyor after the accident. After an accident, the at-fault driver, customer, or rental company should notify the insurance company, call the police, file an accident report (FIR), take pictures as proof, and submit all their paperwork to the insurance company. After this drawn-out process, the insurance company will send a surveyor to evaluate your accident. Therefore, this process requires a lot of time, and occasionally the surveyor may defraud us or make errors in the survey. Therefore, we are shortening and simplifying the process. Our project will help the guilty driver calculate the assessment and be able to calculate the cost of correction himself. To do this, we use image processing that allows to identify images after training. As we know, CNN works best in the field of image processing. During this process, the guilty driver will take pictures and upload them to our website and our website will prosecute everything. The process of detecting a damaged vehicle will check the location of the damage, the extent of the damage and calculate the estimated amount that the driver or car rental company can claim for compensation.

Goals and Objectives

Efficiency and Speed :

Reduce the time and effort required for the auto insurance claim procedure significantly by eliminating the requirement for physical

inspections by insurance surveyors. The primary objective is to expedite the claims procedure.

Accuracy :

By using image processing methods, in particular Convolutional Neural Networks (CNNs), to boost the damage assessment's accuracy. This ought to result in a more precise evaluation of the extent and location of the damage.

Damage Detection :

To create and install a powerful image processing system that can detect and assess car damage using uploaded photos. Identifying the type, location and extent of damage is part of this process.

Cost Estimation :

Accurately estimate repair and maintenance costs based on observed damage. This helps drivers or rental companies understand the value of a potential insurance claim.

Cost Reduction :

Reduce costs for both the insurance company and claimants. Automating damage assessment eliminates the need for on-site surveyors, resulting in cost savings.

Motivation

This project aims to use advanced technology to make the auto insurance claims process more efficient, accurate and user-friendly. It

aims to address longstanding issues in the insurance industry and improve the overall experience for both insurers and policy holders.

Significance

The importance of this project is multifaceted. This will improve the efficiency, fairness, transparency and security of the auto insurance claims process, benefiting both insurers and policyholders. This is a major step forward in how the insurance industry can use technology to provide better services and experiences to their customers.

Literature Survey

A lot of money is wasted in the car insurance company called claim leakage, Claims leakage is gap between optimal and actual settlement of a claim. We are helping guilty. Driver or rental industries to know the estimation of claiming amount just by uploading their damaged car pictures. And we want to help insurance company by saving their time. So, we are using CNN (convolution neural network) for this problem. CNN are very good at image processing which gives more than 80% accuracy. Here we are taking the damaged car images to train CNN. Data set to train CNN is particularly not available so we are thinking to collect the images from the internet and different sources. And with the help of CNN, we can find out that it's a car or not, and vehicle manufacturers and year of manufacture. Image processing is helping us find out the damage location and severity of damage. Severity of damage helps us to calculate the estimation of claiming amount.

Objectives

The goal of employing image processing to implement auto-claim automobile insurance is to greatly cut down on the time it takes to process claims and improve the accuracy of damage assessment, giving

policyholders faster and more convenient service. While protecting the security and privacy of sensitive customer information, this strategy aims to reduce fraudulent claims, enhance customer satisfaction, and streamline insurance company workflows. In the end, this will result in cost savings, increased operational efficiency, and better use of data for risk assessment and compliance.

Features

Since there is no publicly accessible data collection for the classification of car damage, we have developed our own data set including photographs of various forms of vehicle damage. We take into account seven different forms of damage that are frequently observed, including glass fractures, bump rods, doors, broken headlamps and tail lamps, scraping, and cracking. Additionally, we have gathered pictures that are categorized as non-abrasive. The images were personalized after being gathered from the web.

Expected Outcome

The result will be the degree of damage to the car, which we can categorize using the learned characteristics into medium, low, and heavy severity.

References

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Source Code Link

https://github.com/sriramofficial9/Feature_Engineering_project