LITERATURE PROJECT ON INTELLIGENT VEHICLE DAMAGE ASSESMENT AND COST ESTIMATOR FOR INSURANCE COMPANY

ABSTRACT

Over the past five years, analysts and policymakers have become increasingly interested in the "full social cost" of motor vehicle use. Not surprisingly, there is little agreement about how to estimate the social cost or why, with the result that estimates and interpretations can diverge tremendously. In this situation, policymakers and others who wish to apply estimates of the social cost of motor vehicle use might find it useful to have most of the major estimates summarized and evaluated in one place. Toward this end, we review the purpose, scope, and conclusions of most of the recent major U.S. studies, and summarize the cost estimates by individual category. We also assess the level of detail of each major cost estimate in the studies.

1. Introduction

According to August 22, 2018, 'China Banking and Insurance Regulatory Commission Office on the Monitoring of Small Claims Insurance Services in 2017' data show that: In 2017, 55.4113 million automobile insurance claims were settled normally. Among them, there are 40.128 million small-scale cases, accounting for 72.22%. The average insurance payment period for small-scale automobile insurance cases is 11.8 days, while the claim period for investigation, damage assessment and claim collection accounts for 9.94 days.

These data have triggered several reflections on small-scale cases: Firstly, for insurance companies, 72.22% of small cases require the presence of damage fixers, which leads to high cost of risk investigation, and the leakage problem in the process of damage fixing is difficult to control. Secondly, for the accident party, the long waiting time at the accident site, the slow payment process, the unreasonable fixed price and other issues, to a certain extent, reduce customer satisfaction with the insurance company. In addition, the potential dangers of traffic congestion and secondary accidents caused by small-scale cases also bring a great pressure to the traffic control department.

In the claims industry under the new generation of AI development plan, how can insurance companies move towards a new business model of 'Artificial Intelligence + Scene Application'? Deep convolutional neural networks [1, 2] have led to a series of breakthroughs for image classification [3]. With the development of deep learning [4], the process of computer vision has been greatly accelerated. Research on visual recognition is undergoing a transition from feature engineering to network engineering [5]. With the continuous innovation of AI algorithms and the increasing level of

Technical Intelligence:
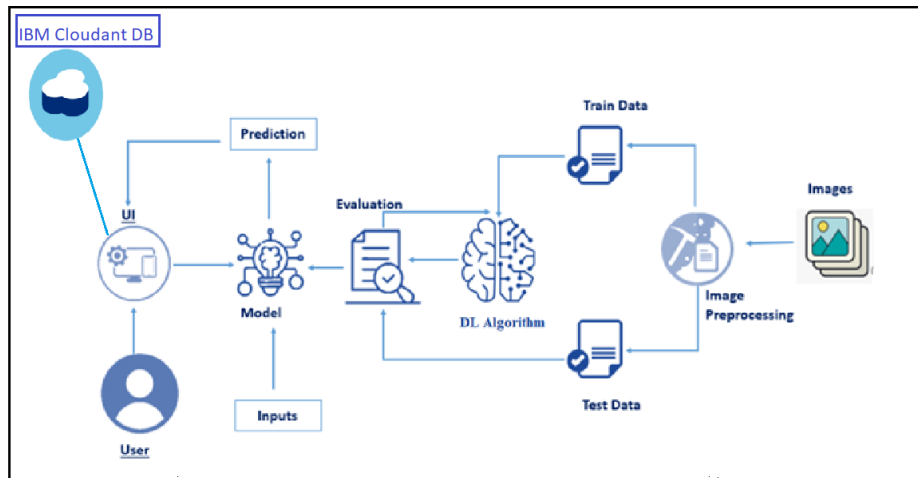
LITERATURE SURVEY

Li Ying & Dorai Chitra, presented the CNN Model for the auto insurance claims process, improvements in the First Notice of Loss and rapidity in the investigation and evaluation of claims could drive significant values by reducing loss adjustment expense. This paper proposed a novel application where advanced technologies in image analysis and pattern recognition are applied to automatically identify and characterize automobile damage. Success in this will allow some cases to proceed without human adjusters, while others to proceed more efficiently, thus ultimately shortening the time between the first Notice of Loss and the final pay-out. To investigate its feasibility, they built a prototype system which automatically identifies the damaged area(s) based on the comparison of ages. Performance of the before- and after-accident automobile in of the prototype system has been evaluated on images taken from forty scaled model cars under reasonably controlled environments, and encouraging results were obtained. It is a belief that, with the advancement of image analysis and pattern recognition technologies, their proposed idea could evolve into a very promising application

METHODOLOGY

To begin, it gathers the photographs of one's damaged automotive, which then feed into the machine learning model, which uses image processing to identify the elements of the image, and then uses image processing to analyses the percentage of damage to the automobile. The next it divides the photographs into two categories, as illustrated in the block diagram: replace and repair. If the damage percentage exceeds, say, 80%, the damaged part

must be replaced, however if the damage percentage is less than 80%, it computes the compensation amount depending on the damaged percentage. Create a thorough report based on our examination of the vehicle and use it to file a claim with the insurance provider for payment

PROPOSED SYSTEM

In proposed system firstly, it collects the pictures of one's damaged automobile, later use these pictures to feed into our ML model that makes use of image processing to identify the details of the image, using Image processing it analyses the percentage of damage of the automobile. Next, it segregates the pictures based on 2 factors which are replace and repair. i.e. ifthe damage percentage exceeds say 80% then the damaged part has to be replaced, whereas in the other case "Replace" even in this case it calculates the reimbursement amount based on its damaged percentage. Then at last it generates a detailed report on analysis of the automobile and use this to claim one's reimbursement with the insurance company.

IMPLEMENTATION

The analysis of car damage model accepts an input image from an user in JPEG format and processes it across different stages, the project is divided into 2 phases, to identify the damaged car that is, if the car is damaged or not, and then to find the location of damage like front, rear or back. The analysis can be achieved using steps that include image classification and object detection. In image classification, it processes and classify the image provided by the user into either damaged car or a whole car i.e., undamaged or completely fine. Whereas, object detection and image localization come into picture to help us identify the location of the damage. It can predict the location along with the class for each object using Object Detection.

ADVANTAGES

1. It can categorize the proportion of damaged parts and determine whether they need to be replaced or repaired.
2. It aids the user in expediting the process of filing an insurance claim for his vehicle.
3. Get a report with the vehicle's damage analysis created for you. To get compensation, submit the created report. Process that saves time and money.

CONCLUSION AND FUTURE WORK

In this work of Damage analysis of a vehicle in general and insurance reclaim, a system has been designed using CNN and image classification which takes the input from a user as an image to test the severity of damage, which happens in a sequence of two steps. First being the image classification, here the input provided by the user is processed by the neural network to identify the car that isif the car is damaged or not. and later on the second step, the flattened input obtained as the output in step 1 is applied for object detection to identify the region and severity of damage, where region might be rear, front or side and severity is divided into minor,

moderate and major. The R-CNN network identifiesthe severity of damage and a report is filed and sent to the user and the insurance firm.