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LITERATURE SUYVEY

TITLE	: INTELLIGENT VEHICLE DAMAGE ASSESSMENT AND COST ESTIMATOR FOR INSURANCE COMPANIES
TECHNOLOGY	: Artificial Intelligence
DOMAIN NAME	: Banking and Finance (BN&FN)
LEADER NAME	: K.FELOOMI
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ABSTRACT: Nowadays, a lot of money is being wasted in the car insurance business due to leakage claims. Claims leakage or Underwriting leakage is characterized as the discrepancy between the actual payment of claims made and the sum that should have been paid if all of the industry's leading practices were applied. Visual examination and testing have been used to may these results. However, they impose delays in the processing of claims. The aim of this project is to build a model that can detect the area of damage on a car. The rationale for such a model is that it can be used by insurance companies for faster processing of claims if users can upload pictures and the model can assess damage that can be dent or scratch and estimates the cost of damage. This model can also be used by lenders if they are underwriting a car loan, especially for a used car.

INTRODUCTION: In today's world, it can observe that the number of vehicles we use is quickly expanding; let's agree that there isn't a single street without a car. As a result, an increase in the number of automobiles on the road may lead to an increase in the percentage of accidents occurring nearby; additionally, the number of accidents occurring nearby would be significant; the accidents would not be particularly serious, but the automobile would be damaged, prompting people to file insurance claims. The whole idea focuses on this question: how can a customer claim insurance more quickly? To keep the procedure quiet, a artificial intelligence model is developed that utilizes image processing to categorize the photographs and calculate the percentage of damage to the car. The user will be able to get payment based on the model's outcomes. This model would be exclusively responsible for this procedure, it would be faster than the manual approach. Analyze the damage in a fraction of the time it takes people and with minimal human interaction.

LITERATURE SURVEY:

➢ The author describes that,Nowadays the proliferation of automobile industries is directly related to the increasing number of car incidents. So, insurance companies are facing many simultaneous claims and solving claims leakage. The algorithms detect the damaged part of a car and assess its location and then its severity. Initially, we discover the effect of domain-specific pre-trained CNN models, which are trained on an ImageNet dataset, and followed by fine-tuning, because some of the categories can be fine-granular to get our specific tasks [1].

➢ The author says that, automatically detecting vehicle damage using photographs taken at the accident scene is very useful as it can greatly reduce the cost of processing insurance claims, as well as provide greater convenience for vehicle users. An ideal scenario would be where the vehicle user can upload a few photographs of the damaged car taken from a mobile phone and have the damage assessment and insurance claim processing done automatically [2].

➢ The author describes that, Traffic congestion due to vehicular accidents seriously affects normal travel, and accurate and effective mitigating measures and methods must be studied. To resolve traffic accident compensation problems quickly, a vehicle-damage-detection segmentation algorithm based on transfer learning and an improved mask regional convolutional neural network (Mask RCNN) is proposed in this paper [3].

➢ The author describes that, Claims leakage is a major problem engendering tremendous losses for insurance companies. Those losses are due to the difference between the amount paid by insurance companies and the exact amount that should be spent, which cost millions of dollars yearly. Experts assert that these losses are caused by inefficient claims processing, frauds, and poor decision-making in the company. With the huge advances in Artificial Intelligence (AI), machine and deep learning algorithms, those technologies have started being used in insurance industry to solve such problems and cope with their negative consequences. In this paper, we propose automated and efficient deep learning-based architectures for vehicle damage detection and localization [4].

Reference:

[1] Car Damage Detection and Classification
Kyu, P. M., & Woraratpanya, K. (2020, July). Car damage detection and classification. In Proceedings of the 11th international conference on advances in information technology (pp. 1-6).

[2] Image based automatic vehicle damage detection
Jayawardena, S. (2013). Image based automatic vehicle damage detection.

[3]Vehicle-Damage-Detection Segmentation Algorithm Based on Improved Mask RCNN
Zhang, Q., Chang, X., & Bian, S. B. (2020). Vehicle-damage-detection segmentation algorithm based on improved mask RCNN. IEEE Access, 8, 6997-7004.

[4] A Very Deep Transfer Learning Model for Vehicle Damage Detection and Localization
Dhieb, N., Ghazzai, H., Besbes, H., & Massoud, Y. (2019, December). A very deep transfer learning model for vehicle damage detection and localization. In 2019 31st International Conference on Microelectronics (ICM) (pp. 158-161). IEEE.