LITERATURE SURVEY

PAPER TITLE	AUTHOR - PUBLICATION	DRAWBACKS	PROPOSED METHODOLOGIES	OUTCOMES	FUTURE SCOPE
Image Based Automatic Vehicle Damage Detection	Srimal Jayawardena A thesis submitted for the degree of Doctor of Philosophy at The Australian National University	This thesis proposes a solution which uses 3D Computer Aided Design for the discernment of car damage from the picture, the system only detects damage at the edge portion only. Detection of car damage through CAD software requires some knowledge about the software.	Monocular 2D/3D pose estimation 3D model-assisted segmentation Reflection detection Obtain reliable point correspondences across photographs with largely reflective and homogeneous regions	The project explores the problem of automatically detecting mild damage in vehicles using photographs taken at the scene of the accident.	Detecting damages to vehicle panels such as dents, deformations in panels and also estimating the degree of damage in terms of repair costs. Making use of the reflections and specular highlights in the process of recovering the 3D pose.
Car Damage Assessment Based on VGG Models	Phyu Mar Kyu and Kuntpong Woraratpanya - Institute of Electrical and Electronics Engineers (IEEE) Conference: JSCI8	Observed that training with a small dataset is insufficient to get the best accuracy based on the deep learning approach. Persistence of overfitting problem in the model performance	Deep learning-based algorithms, VGG16 and VGG19, for car damage detection and assessment Pre-trained CNN models trained on ImageNet dataset YOLO object detection to train and detect damage region Transfer learning in pre-trained VGG model	94%, 71% and 61% in damage detection, damage location and damage severity in VGG16 Comparison of VGG16 and VGG19 model Precision, Recall, and F!-score	Training model with larger number dataset with diverse image The results of using transfer learning and regularization can work better than those of fine-tuning.
Convolutional Neural Networks for vehicle damage detection	R.E. van Ruitenbeek, S. Bhulai Machine Learning with Applications Volume 9, 15 September 2022, 100332	Challenge in damage inspection is the robustness against different light conditions	A damage detection model is developed to locate vehicle damages and classify these into twelve categories. FSSD with Darknet-53 and YOLO v3 with Darknet-53 yield the best mAP on, respectively.	A deep learning model that is able to accurately detect and classify vehicle damages. The model is evaluated in a specially designed light street, indicating that strong reflections complicate the detection performance. The model outperforms in the classes Bend and Cover Damage	Cross-validation between annotators and studies of the effect of different annotation granularities can be carried out.

Damage Assessment of a vehicle and Insurance Reclaim.	Vaibhav Agarwal, Utsav Khandelwal, Shivam Kumar, Raja Kumar, Shilpa M 2022 IJCRT | Volume 10, Issue 4 April 2022 | ISSN: 2320-2882	The major drawback of the proposed model is that it only identifies the physical visible damage and not the internal or the interior damage.	A technique that compares before-and after-accident car images to automatically detect the damaged location. The R-CNN network identifies the severity of damage and a report is filed and sent to the user and the insurance firm.	The proportion of damaged parts is categorized and determining whether they need to be replaced or repaired. the user is aided in expediting the process of filing an insurance claim for his vehicle.	A reduction of model training time is a challenge. An advanced model to classify the damage of the exact components and the extend of the damage.
Car Damage Assessment for Insurance Companies	Mandara G S1 and Prashant Ankalkoti2 PG Student, Department of Master of Computer Application1 Assistant Professor, Department of Master of Computer Application2 J N N College of Engineering, Shimoga, India International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)	Less number of epochs with increasing validation loss Image Net dataset used limiting the diversity in the possibilities of damage detection	The following methods are used in the proposed system. Dataset Explanation. Describing the level of damage. CNN Model. VGG16 Algorithm.	In this proposed project a neural network-based solution for car detection; manage the problem of car damage analysis, prediction of car damage location and severity of the damage. By simply sending the image of the car, the system will analyze the given image and show if there is any kind of damage to the car along with the location of the damage and also the severity of the damage.	Increase the accuracy of the model by training for higher epochs and preventing overfitting issue Carrying out multiple functions in one package