- **INTELLIGENT VEHICLE DAMAGE ASSESSMENT AND COST ESTIMATOR FOR INSURANCE COMPANIES**

LITERATURE SURVEY

TEAM ID: PNT2022TMID53870

S.NO	PAPER	AUTHOR	YEAR	SHORT DESCRIPTION	RESULT	FUTURE WORK AND ANALYSIS
1.	Automatic assessment of damage and repair costs in vehicles.	Vikas Taliwal, Siddhartha Dalal, Kaigang Li, Gaurav Sharma.	2018	• A system and method are provided for automatically estimating a repair cost for a vehicle. • A method includes: receiving, at a server computing device over an electronic network, one or more images of a damaged vehicle from a client computing device; performing image processing operations on each of the one or more	• 71% of Trackers, were felt strong whereas all of them found the adaptive interface better for reading. • However, 80% of the Reviewers preferred the baseline to be little more perfect.	Further explore the design of adaptive interfaces, in order to be in a position to demonstrate Automatic assessment of damage and repair costs in vehicles

				images to detect external damage to a first set of parts of the vehicle; inferring internal damage to a second set of parts of the vehicle based on the detected external damage; and, calculating an estimated repair cost for the vehicle based on the detected external damage and inferred internal damage based on accessing a parts database that includes repair and labor costs for each part in the first and second sets of parts.		

2.	Deep learning based car damage and detection of automotive industry.	Kili Companies	2022	• It is typical for machine learning to be used to automate tedious and time-consuming and repetitive tasks. • Machine learning based workflows allow the detection of damaged parts, and will analyze damages, predict the necessary repair and estimate overall costs. • This is achievable through the use of Image/Video Annotation for Computer Vision to train machine learning models.	• The use of ML models allows for the collection, analysis and dissemination of insights, which ultimately leads to expedited inspection procedures that take into more accurate consideration factors such as the road, the illumination, the weather, the amount of traffic, the speed, the type of damage and the accident severity.	• Insurance companies stand to benefit significantly when it comes to using AI and ML for car damage detection. • Not only does the technology fasten the underwriting process, but it also prevents fraud. • Car damage detection also benefits the likes of car repair and rental services since it brings much-required transparency to the process of calculating costs for repairs and making repairs, as well as bringing transparency between customers and rental car companies during the car rental process.

3.	Automated Car Damage Detection With AI for Remote Assessment and Improved Claims Processing	Karamveer Verma	2021	• The world of insurance is highly regulated, which often leads to delays in processing an insurance claim. • Talking about claims for car damages, the process is further delayed as it includes human intervention for damage inspections.	• With AI, car damage detection and remote assessments are automated and the manual intervention is drastically reduced.	• No future Work

4.	Automatic Car Damage Assessment System	Wei Zhang, Zuan Cheng	2021	• We demonstrate a car damage assessment system in car insurance field based on artificial intelligence techniques, which can exempt insurance inspectors from checking cars on site and help people without professional knowledge to evaluate car damages when accidents happen. • We adopt object and video detection and segmentation techniques in computer vision, and take advantage of multiple frames extracted from videos to achieve high damage recognition accuracy.	• The system uploads video streams captured by mobile devices, recognizes car damage on the cloud asynchronously and then returns damaged components and repair costs to users. • The system evaluates car damages and returns results automatically and effectively in seconds, which reduces laboratory costs and decreases insurance claim time significantly.	• Unlike existing approaches, we utilize videos instead of photos to interact with users to make the whole procedure as simple as possible.