|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| TITLE | AUTHOR | YEAR | DESCRIPTION | ADVANTAGES | DISADVANTAGES | METHODOLOGY |
| The use of telematics data in vehicle insurance | * K.Korishchenko * I. Stankevich * N. Pilnik * D. Petrova | 2019 | This paper introduces an approach to telematic devices data application in automotive insurance. we conduct a comparative analysis of different types of devices that collect information on vehicle utilization and driving style of its driver | Better Customer Service, Improved Risk Management,  Incresed Client Base. | It is easy to track the user because of sending privacy information to the system.  Installing telematics is expensive | Telematics data such as GNSS positioning and communicate via server (GSM/GPRS) |
| we can use well-organized deep knowledge-based constructions for detecting, localizing, and classification  vehicle damage using enhanced Mask R-CNN method which integrates deep learning, instance segmentation. | * Jihab qaddour * Syeda Ayesha siddiqa | 2022 | This paper shows deep learning algorithms have been utilized to clarify such issues, mitigate their pessimistic implications, and automate this process to save time and money. In this context, we offer brutalize as well as well-organized deep knowledge-based constructions for detecting, localizing, and classification vehicle damage using enhanced Mask R-CNN method | Quickly accessing claims, verifying documents, enhancing customer experience and detecting fraud | Incapable of multitasking , hardware dependence, deep learning models will perform well when their complexity is appropriate to complexity of the data. | We get attainable databases from damaged automobile vehicles. focus on augmentation of data to enlarge synthetically and alter the data set to relax its tolerance and improve its performance to the problem of overfitting at the time of training as we already work with a limited set of data. |
| Research on Vehicle Appearance Damage Recognition Based on Deep Learning | * Qianqian Zhu1, * Wei Hu2, * Yingnan Liu1 and Zihao Zhao1 | 2021 | This paper shows how vehicle appearance damage recognizes the algorithm based on deep learning and evaluation model. | qualitative improvement compared with the traditional car insurance claim settlement business.  good robustness and high accuracy. | it is difficult to define the obvious scope of a vehicle damage. | Damage Recognition Model.The model includes the backbone network for feature extraction, the RPN generated by candidate regions, ROIAlign and the headnetwork.  Evaluation Method Based on Component-assisted.  Evaluation Method Based on Component-assisted. |
| Damaged Vechile parts Recognition Using Capsule Neural Network | Kundjanasith Thonglek  Norawit Urailertprasert Patchara Pattiyathanee Chantana Chantrapornchai | 2022 | This paper shows about Damged vechile part recgonition using capsule neural network.a damaged vehicle part detection platform, called Intelligent Vehicle Accident Analysis (IVAA) which provides artificial intelligence as a service (AIaaS), is proposed. | damage localization and damage  classification.  The accuracy of the damage localization is 93.28% and the accuracy of the damage classification is 98.47%, respectively. | error-prone, time-consuming, and requires man-hour workers. | The system helps automatically assess vehicle parts’ damage and severity level.  An insurance company can utilize our service to speed up the claiming process.  IVAA is built on the docker image which allows the system to be scaled depending on the workload efficiently. Capsule neural network (CapsNet) is applied for damage recognition including two phrases: damage localization and damage classification. The accuracy of the damage localization is 93.28% and the accuracy of the damage classification is 98.47%, respectively. |
| Accurate Damage Dimension Estimation in AI Driven Vehicle Inspection System | Adrita Barari  N.V.S Abhilash  Payanshi Jain  Ankit Sati  Karthik Sai Datta  Chirag Jain | 2020 | In this paper, they present a near real-time end-to-end solution which yields accurate damage detection and propose approaches for providing dimensions of the damages for accurate repair cost estimates for the vehicle. | The damage assessment involves granular part detection, damage localization and classification into different damage types such as dent, scratch, crush, tear, etc. | Physical dimension estimation of the damages is required for computing cost to the customer. | Incorporates an ensemble of computer vision algorithms to calculate dimensions, generating bounding boxes, and consolidating the damage predictions to provide an overall damage estimate from multiple images captured by vehicle owner. |
| Car Damage Detection and Cost Evaluation Using MASK R-CNN | J. D. Dorathi Jayaseeli  Greeta Kavitha Jayaraj  Mehaa Kanakarajan  D. Malathi | 2021 | In this paper, they propose employing convolution neural networks to build a Mask R-CNN model that can detect the area of damage on a car. The dataset used consists of images of damaged vehicles with a single class named scratch. | Car dealers can eliminate the manual process of damage assessment and the labor cost accompanied by it.  Accuracy and transparency in pricing cars and their potential repairs will be made more prevalent  Fraudulent vehicle insurance claims can also be diminished | Vehicles have very reflective metallic bodies the photographs taken in such an uncontrolled environment can be expected to have a considerable amount of inter object reflection. Therefore, the application of standard computer vision techniques in this context is a very challenging task. | Detecting the damage on a car using image-based processing method with enormous scope for automation. |
| Research on Intelligent Vehicle Damage Assessment System Based on Computer Vision | Zhu Qianqian  Guo Weiming  Shen Ying  Zhao Zihao | 2020 | In this paper,  based on the demand of automobile insurance claims and intelligent transportation, combined  with abundant basic data and advanced machine vision algorithm, an intelligent damage  determination system of 'Artificial Intelligence + Vehicle Insurance' is constructed. This paper  first introduces the functions of the intelligent damage assessment system | It assists insurance companies to achieve rapid and  accurate pricing in the process of fixing losses and claims.  It realizes the fraud recognition in the whole process of damage determination  and can effectively control the cost expenditure of insurance companies. | The photography of vehicle damage,it is necessary to shoot the vehicle damage head-on so  that the damage location is as far as possible in the center of the picture. The shooting distance is about  1 meter, and it is suitable to shoot clearly | Detecting the damage on a car using Computer Vision method |