Literature survey

Research on Intelligent Vehicle Damage Assessment System Based on Computer Vision

At present, underneath the steerage of the new generation of data technology, the rapid accumulation of information, the continual improvement of computing power, the continual optimization of rule models, and therefore the fast rise of multi-scene applications have created profound changes within the development surroundings of computer science. During this paper, based on the demand of insurance claims and intelligent transportation, combined with copious basic information and advanced machine vision rules, an Associate in Nursing intelligent injury determination system of 'Artificial Intelligence + Vehicle Insurance' is made. This paper first introduces the functions of the intelligent injury assessment system. Secondly, it discusses the belief path of every purposeful module very well, and at last puts forward the vision for the long run.

Automatic Emergency Braking (AEB) System Impact on Fatality and Injury Reduction in China.

The automatic emergency braking (AEB) system is an efficient intelligent vehicle active safety system for avoiding certain varieties of collisions. This study develops a national-level safety impact analysis model for this intelligent vehicle perform, as well as the potential most impact and realistic impact. The analysis model was first applied in China to supply insights into Chinese policymaking. Road traffic fatality and severe injury trends, the proportion of various collision varieties, the effectiveness of collision turning away, and also the AEB penetration rates square measure considered within the potential most impact situation. What is more, the AEB activation rate and also the technology’s technical limitations, as well as its effectiveness in several weather, light, and speed conditions, square measure mentioned within the realistic situation. With a 100% penetration rate, fatalities might be reduced by thirteen.2%, and injuries can be reduced by nine.1%. supported China’s policy, the market penetration rate of intelligent vehicles with AEB is foretold to be thirty four.0% in 2025 and sixty.3% in 2030.

Automatic Car Damage Assessment System: Reading and Understanding Videos as Professional Insurance Inspectors.

We demonstrate an automotive harm assessment system in the automotive insurance field supported by computer science techniques, which can exempt insurance inspectors from checking cars on websites and facilitate folks with not skilled data to evaluate automotive damages once accidents happen. Unlike existing approaches, we tend to utilize videos rather than photos to act with users to form the full procedure as easy as possible. We adopt object and video detection and segmentation techniques in laptop vision, and cash in multiple frames extracted from videos to realize high harm recognition accuracy. The system uploads video streams captured by mobile devices, acknowledges automotive harm on the cloud asynchronously and then returns broken elements and repair prices to users. The system evaluates automotive damages and returns results automatically and effectively in seconds, which reduces laboratory prices and reduces claim time considerably.

Car Damage Detection and Classification

The proliferation of automobile industries is directly related to the increasing variety of automobile incidents. So, insurance companies face many synchronous claims and determination claims escape. The sense of AI (AI)supported machine learning and deep learning algorithms can facilitate the styles of disadvantage for insurance industries. Throughout this paper, we are using deep learning-based algorithms for car hurt detection and assessment in real-world datasets. The algorithms notice the broken area of an automobile and assess its location thus its severity. Initially, we tend to tend to get the impact of domain-specific pre-trained CNN models, that unit trained on an Image Net dataset, and followed by fine-tuning, as a results of some of the categories is fine-granular to urge our specific tasks.Then we tend to tend to use transfer learning in pretrained VGG models and use some techniques to boost the accuracy of our system. We achieve the accuracy of ninety 5.22% of VGG19 and ninety four.56% of VGG16 in the broken detection, the accuracy of seventy six.48% of VGG19 and 74.39% of VGG16 in hurt localization, the accuracy of fifty eight.48% of VGG19 and fifty four.8% of VGG16 in hurt severity. From their results, the performance of VGG19 is best than VGG16. After analyzing and implementing our models, we tend to discover that the results of victimization transfer learning and L2 regularization can work over those of fine-tuning.

A Unified Framework of Intelligent Vehicle Damage Assessment based on Computer Vision Technology

Due to the event of deep learning, in recent years, the sphere of laptop vision grows quickly. A large amount of laptop vision technologies are applied in actual issues. At present, the trade of auto harm assessment needs plenty of men, and new automatic intelligent harm assessment technology will greatly scale back industrial prices. During this paper, a framework of intelligent vehicle harm assessment formula supported object detection technology and image classification technology is planned. This formula will mechanically determine the harm position, type and degree per photos provided by users, so as to offer applicable maintenance value and reach the accuracy that can meet actual application needs

A Very Deep Transfer Learning Model for Vehicle Damage Detection and Localization

Claims escape could be a major drawback engendering tremendous losses for insurance firms. Those losses are unit due to the distinction between the number paid by insurance companies and therefore the precise quantity that ought to be spent, which cost numerous bucks yearly. consultants assert that these losses are a unit caused by inefficient claims process, frauds, and poor decision making within the company. With the large advances in Artificial Intelligence , machine and deep learning algorithms, those technologies have started getting used in insurance trade to solve such issues and deal with their negative consequences. In this paper, we have a tendency to propose machine-driven and economical deep learning-based architectures for vehicle injury detection and localization. The planned resolution combines deep learning, instance segmentation, and transfer learning techniques for options extraction and injury identification. Its objective is to mechanically observe damages in vehicles, find them, classify their severity levels, and visualize them by contouring their precise locations.

Deep Learning Based Car Damage Classification and Detection

In this paper, we have a tendency to design and enforce an automotive injury classification/detection pipeline, which might be employed by insurance companies to modify the method of car insurance claims. The recent advances in pc vision mostly because of the adoption of quick, scalable and finish to finish trainable Convolutional Neural Networks(CNN's) makes it technically possible to acknowledge vehicle damages exploitation of deep convolutional networks. we have a tendency to manually collected and annotated pictures from numerous on-linesources exploitation net crawler containing differing kinds of car damages.Due to the comparatively little size of our dataset, we have a tendency to used models pre-trained on an outsized and numerous dataset to avoid overfitting and learn additional general features. exploitation CNN models pre trained on ImageNet dataset and applying preprocessing techniques to boost the performance of our system, we were able to come through accuracy of ninety six.39%, considerably higher than results achieved within the past on an identical test-set. What is more, to sight the region of damage we have a tendency to use progressive YOLO object detectors and achieving a maximum map score of seventy seven.78 you choose the held-out take a look at set, demonstrating that the model was able to with success recognise completely different vehicle damages. Overall these results pave the means for more research during this drawback domain and that we believe an assortment of an additional diverse dataset would be comfortable to implement an automatic vehicle damage identification system within the close to future.