Vehicle Damage Detection and Classification Using Image Processing

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Abstract: *Vehicle have an impact on people's daily safety, and because there are so many different types and sizes of materials, it can be challenging to distinguish and detect the conditions around the vehicle. In this project, we looked into the matter of car damage classification and detection, which insurance providers can utilize to quickly automates the handling of vehicle insurance disputes. Deep convolutional networks can be used to detect car damage and with recent developments in computer vision, which are largely attributable to the implementation of quick, scalable, and entire trainable CNN. We manually gathered and annotated pictures of numerous online sources that showed various kinds of car damage. By analyzing the deep learning-based YOLO (you only look once) series target detection method, a recognition approach that relies on YOLOS is provided to achieve timely and efficient identification of the damage in the vehicle. The COCO dataset's base weights are used to train the model. 35-90 epochs are used to process the photos. The region of damage is highlighted in the final image using a color splash technique after processing. The approach would increase customer satisfaction while assisting in lowering the cost of processing insurance claims. Vendors of automobiles can do away with the labor-intensive manual damage assessment process. Additional vehicles will be priced accurately and transparently, along with any necessary repairs. It is also able to decrease misleading vehicle insurance claims.*

Keywords: Vehicle Damage

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