Literature Survey

Team No:3

College Name: Mahendra Institute Of Technology

Department: Computer Science and Engineering

Title: Intelligent Vehicle Damage Assessment And Cost Estimator For Insurance Companies

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S.No	TITLE	PROPOSED WORK	TOOLS USED/ ALGORITHM	TECHNOLOGY	ADVANTAGES/ DISADVANTAGES
1	Car Damage Detection	Apply deep learning-based algorithms, VGG16 and VGG19, for car damage detection and assessment in real-world datasets.	• Convention al Neural Network • VGG16 • VGG19	Deep Learning	• Accuracy • Damage Detection- 95.22 • Damage Localization - 76.78
2	Deep Residual Learning for Image Recognition	Provide comprehensive empirical evidence showing that these residual networks are easier to optimize and can gain accuracy from considerably increased depth.	• Convention al Neural Network • GoogleNet • VGG16 • PReLu • Object Detection	Deep Learning	• Solely due to our extremely • deep representations. • obtain a 28% relative improvement on the COCO object detection dataset

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3	Applying Image Analysis To Auto Insurance Triage: A Novel Application	built a prototype a system that automatically identifies the damaged area(s) based on the comparison of before- and after-accident automobile images.	• Image Processing • Constrained Object Detection	Machine Learning	• Success • this will help auto insurance companies speed up their claim • use resources more effectively.
4	Batch Normalization: Accelerating Deep Network Training by Reducing Internal Covariate Shift	this phenomenon as internal covariate shift, and address the problem by normalizing layer inputs. The method draws its strength from making normalization a part of the model architecture and performing the normalization for each training mini-batch.	• Batch Normalized neural Network • Stochastic gradient descent (SGD)	Deep Learning	• Improve upon the best-published result on ImageNet classification • reaching 4.82% top-5 test error, exceeding the accuracy of human raters.

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5	Damage Detection Based on Object-based Segmentation	object-based image segmentation and classification techniques as well as pixel-based techniques have been applied.	• Dark Object Subtraction Model • Visualization Detection	• Image Preprocessing • Deep Learning	• demonstrated that the pixel-based approach has achieved higher user's accuracy (23.2%), while the object-based approach higher producer's accuracy (49.98%).
6	Learning and Transferring Mid-Level Image Representations using Convolutional Neural Networks	CNN's is attributed to their ability to learn rich mid-level image representations as opposed to hand-designed low-level features used in other image classification methods	• CNN • large- scale visual recognition challenge	• Deep Learning	• transferred representation leads to significantly improved results for object and action classification, • outperforming the current state of the art on Pascal VOC 2007 and 2012 datasets

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7	Classification from High-resolution Satellite Images	classification techniques as well as pixel-based techniques have been applied.	• Visualization Detection • Pixel and Object-based Detection	• Deep Learning	• user's accuracy (23.2%), while the object-based approach higher producer's accuracy (49.98%).
8	Car Damage Classification	The algorithms detect the damaged part of a car and assess its location and then its severity	• Conventional Neural Network • VGG16 • VGG19	• Deep Learning	• Damage Localization -76.78 • observed that training with a small dataset is insufficient to get the best accuracy based on the deep learning approach.

THANK YOU