A Video Based Vehicle Detection And Classification System

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A Video Based Vehicle Detection
A Video based Vehicle Detection, Counting and Classification System. September 2018; International Journal of Image, Graphics and Signal Processing 10(9):34-41; DOI: 10.5815/ijigsp.2018.09.05.

(PDF) A Video based Vehicle Detection, Counting and ...
Based on the input videos, the accuracy of proposed vehicle detection and counting ranged from 95 percent to 99 percent. And what we have found is that the proposed algorithm and method tested quite well for every tested video. The experimental results for vehicle counting are shown below:

A computer vision based vehicle detection and counting ...
Vehicle . A Video based Vehicle Detection, Counting and Classification System I.J. Image, Graphics and Signal Processing, 2018, 9, 34-41

A Video based Vehicle Detection, Counting and ...
This paper proposes a novel video-based vehicle detection approach with data-driven adaptive neuro-fuzzy networks. The key ideas include configuring several virtual loops as vehicle detection zones in the image, assuming moving vehicles will cause pixel intensities and local textures to change, and then identifying such changes to detect vehicles.

Video-Based Vehicle Detection Approach with Data-Driven ...
A Video-based Vehicle Detection and Classification System for Real-time Traffic Data Collection Using Uncalibrated Video Cameras Guohui Zhang (Corresponding Author) Research Assistant Box 352700 Department of Civil and Environmental Engineering University of Washington Seattle, WA 98195-2700 Tel: (206) 543-7827 E-mail: Ryan P. Avery Research Assistant Box 352700 Department of ...

A Video-based Vehicle Detection and Classification ...
Video-based vehicle detection and tracking have been addressed in a variety of ways in the literature. The former aims at localizing vehicles by exhaustive search in the images, whereas the latter aims to keep track of already detected vehicles.

Video analysis-based vehicle detection and tracking using ...
Intelligent vehicle detection and counting are becoming increasingly important in the field of highway management. However, due to the different sizes of vehicles, their detection remains a challenge that directly affects the accuracy of vehicle counts. To address this issue, this paper proposes a vision-based vehicle detection and counting system.

Vision-based vehicle detection and counting system using ...
In this paper, we first reviewed different kinds of vehicle detection methods and pointed out that the video based detection technique is the most advantageous method.

Overview of video-based vehicle detection technologies ...
Essential Concepts you should know about Video Object Detection – Frame Differencing – Image Thresholding – Contours Finding – Image Dilation; Build a Vehicle Detection System using OpenCV . The Idea Behind Detecting Moving Objects in Videos. Object detection is a fascinating field in computer vision.

Vehicle Detection in Videos using OpenCV and Python
This work aims at real-time in-car video analysis to detect and track vehicles ahead for safety, auto-driving, and target tracing. This paper describes a comprehensive approach to localize target...

(PDF) Vehicle Detection and Tracking in Car Video Based on ...
Abstract. Non-intrusive video vehicle detection and tracking for traffic flow surveillance and statistics is the primary alternative to conventional inductive loop detectors. Vision-based systems for traffic have an impressive spread both for their practical application and interest as research issue. This paper presents vision-based vehicle detection and tracking system which consists of environment background segmentation and subtraction, foreground moving object extraction, moving ...

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the a video based vehicle detection and classification system, it is entirely simple then, since currently we extend the

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A Video Based Vehicle Detection And Classification System

Video-based vehicle detection and tracking have been addressed in a variety of ways in the literature. The former aims at localizing vehicles by exhaustive search in the images, whereas the latter aims to keep track of already detected vehicles. As regards vehicle detection, since exhaustive

Video analysis-based vehicle detection and tracking using ...

Qu et al. proposed a multi-feature front-vehicle detection method that first adopted pre-processing methods, such as graying, smoothing filtering, and histogram equalization to improve the image quality, then used a segmentation algorithm to roughly segment the background and the vehicle in the image, and finally detected the vehicle by comprehensively considering the directional characteristics of underbody shadows and the rear of the vehicle, as well as the symmetry of the vehicle.

Front-Vehicle Detection in Video Images Based on Temporal ...

Yuan proposed a double mapping framework for video smoke detection based on various features including edge orientation, edge magnitude, and Local Binary Pattern (LBP) bit, etc. Chen et al proposed a fast video flame detection method based on the temporal and spatial characteristics of flames, such as ordinary flame movement and color clues, etc. Appana et al. proposed to detect smoke based on ...

A three-stage framework for smoky vehicle detection in ...
Video based vehicle detection technology is an integral part of Intelligent Transportation System (ITS), due to its non-intrusiveness and comprehensive vehicle behavior data collection capabilities. This paper proposes an efficient video based vehicle detection system based on Harris-Stephen corner detector algorithm.

Video Based Vehicle Detection and its Application in ...
Vehicle detection is a pro- cess of detecting the presence or absence of a vehicle in the video sequence. Vehicle tracking is defined as find- ing the location of a vehicle in each frame of the...

Video Based Vehicle Detection and its Application in ...
Video based vehicle detection technology is an integral part of Intelligent Transportation System (ITS), due to its non-intrusiveness and comprehensive vehicle behavior data collection...

(PDF) Video Based Vehicle Detection and its Application in ...
A Review on Video Based Vehicle Detection, Recognition and Tracking Motion Based Models: Motion based methods extract moving vehicles based on motion from background. Motion based methods includ es Temporal frame differencing and Back ground subtrac tion .

This two-volume set (CCIS 201 and CCIS 202) constitutes the refereed proceedings of the International Conference on Computer Science and Education, CSE 2011, held in Qingdao, China, in July 2011. The 164 revised full papers

presented in both volumes were carefully reviewed and selected from a large number of submissions. The papers address a large number of research topics and applications: from artificial intelligence to computers and information technology; from education systems to methods research and other related issues; such as: database technology, computer architecture, software engineering, computer graphics, control technology, systems engineering, network, communication, and other advanced technology, computer education, and life-long education.

supporting the Conference.

Non-linear image processing -- Color photo denoising via hue, saturation and intensity diffusion / Lei He and Chenyang Xu -- Examining the role of scale in the context of the non-local-means filter / Mehran Ebrahimi and Edward R. Vrscay -- Geometrical mutliscale noise resistant method of edge detection / Agnieszka Lisowska -- A simple, general model for the affine self-similarity of images / SImon K. Alexander, Edward R. Vrscay, and Satoshi Tsurumi -- Image and video coding and encryption -- Efficient bit-rate estimation for mode decision of H. 264 / AVC / Shuwei Sun and Shuming Chen -- Introducing a two dimensional measure for watermarking capacity in images / Farzin Yaghmaee and Mansour Jamzad -- Estimating the detectability of small lesions in high resolution MR compressed images / Juan Paz, Marlen Pérez, Iroel Miranda, and Peter Schelkens -- JPEG artifact removal

using error distributions of linear coefficient estimates / Mika Inki --

The research documented in this report analyzed detection capabilities of a trip-wire video image processing system in a freeway setting. Count and speed accuracy, as well as occlusion, were parameters of interest in field testing at Texas A&M University's Riverside Campus research facility. Testing analyzed three camera heights, 9.1 m (30 ft.), 12.2 m (40 ft.), and 15.1 m (49 ft. - 6 in.), in conjunction with three passenger car speeds, 32 km/h (20 mph), 72 km/h (45 mph) and 88 km/h (55 mph). The video image processing system used in the study was the Autoscope? 2004. The camera imaging device was a 12.4 mm (1/2 inch) interline transfer microlens charged coupled device (CCD), utilizing a 6 mm, fl.2 auto iris lens. An analysis of variance (ANOVA) test indicated that both camera height and travel lane location affected the system's ability to accurately detect passenger cars. Generally, higher camera heights and travel lanes farther from the camera produced accurate passenger car detection farther upstream from the camera, based on no traffic in other lanes closer to the camera. Also, passenger cars traveling in adjacent travel lanes did not always influence the video image processing system's ability to accurately detect passenger cars in this highly controlled environment. The paired t-test indicated that speeds determined by the video image processing system were significantly different from speeds obtained by radar. Tests at night revealed errors in counts, and daylight truck occlusion was worse than cars for all camera heights. Based on the cost information from Texas Department of Transportation, life-cycle costs of video detection are similar to the cost of detection by inductive loops where many individual loop detectors are replaced by one camera, as might occur at intersections. Motorist delay

may cause a different outcome. Where fewer loops are replaced by one camera, as on freeways, the additional investment for video detection will probably not be cost effective.

This book contains the proceedings of the ROBOT 2013: FIRST IBERIAN ROBOTICS CONFERENCE and it can be said that included both state of the art and more practical presentations dealing with implementation problems, support technologies and future applications. A growing interest in Assistive Robotics, Agricultural Robotics, Field Robotics, Grasping and Dexterous Manipulation, Humanoid Robots, Intelligent Systems and Robotics, Marine Robotics, has been demonstrated by the very relevant number of contributions. Moreover, ROBOT2013 incorporates a special session on Legal and Ethical Aspects in Robotics that is becoming a topic of key relevance. This Conference was held in Madrid (28-29 November 2013), organized by the Sociedad Española para la Investigación y Desarrollo en Robótica (SEIDROB) and by the Centre for Automation and Robotics - CAR (Universidad Politécnica de Madrid (UPM) and Consejo Superior de Investigaciones Científicas (CSIC)), along with the co-operation of Grupo Temático de Robótica CEA-GTRob, "Sociedade Portuguesa de Robotica" (SPR), "Asociación Española de Promoción de la Investigación en Agentes Físicos" (RedAF), and partially supported by "Comunidad de Madrid under RoboCity2030 Programme".

The physical processes which initiate and maintain motion have been a major concern of serious investigation throughout the evolution of scientific thought. As early as the fifth century B. C. questions regarding motion were presented as touchstones for the most fundamental concepts about existence. Such wide ranging philosophical issues are

beyond the scope of this book, however, consider the paradox of the flying arrow attri buted to Zeno of Elea: An arrow is shot from point A to point B requiring a sequence of time instants to traverse the distance. Now, for any time instant, T, of the sequence the arrow is at a position, Pi' and at Ti+! the i arrow is at Pi+i> with Pi ::I-P+• Clearly, each Ti must be a singular time i 1 unit at which the arrow is at rest at Pi because if the arrow were moving during Ti there would be a further sequence, Til' of time instants required for the arrow to traverse the smaller distance. Now, regardless of the level to which this recursive argument is applied, one is left with the flight of the arrow comprising a sequence of positions at which the arrow is at rest. The original intent of presenting this paradox has been interpreted to be as an argument against the possibility of individuated objects moving in space.