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ABSTRACT

As urban environments grow and become even more complex, businesses need highly accurate location intelligence technology to stay ahead. Building a scalable network that detects and identifies objects as fast as your brain starts with the vision of the vehicle. Forward-facing cameras and radar will soon be standard equipment in all cars. This project aims at every car learning from every car, car Parking place identification and continuing to enable an autonomous world with the help of tracking device (precise, end-to-end tracking and accurate, real-time, and historical locations for devices, people, and things). By combining open data with proprietary sources and technologies car sensor data and AI, the HEAR location platform offers a uniquely complete location data set along. The raw images captured by cameras may contain noises, the lighting of workspaces, and a flickering of light sources. The preprocessing includes filtering out the noises, images conversions into different colour spaces, blurring the image, edge detection, line detection, circle detection. The current project paper comprises of the development of image processing based parking space management. This project will implement based on the theories of Background subtraction algorithm. The usage of this algorithm will be used as a mapping method to reduce the error of detecting the vehicle. The explanation of algorithms such as Background subtraction algorithm and the implementation of Open CV as software to manipulate the image program will be used throughout the project

Keywords— *Photogrammetric, Image enhancement, Cascaded file, Background subtraction, Pixel transforms*

1. INTRODUCTION

The expansion of GIS is a Geographic Information System which consists of three words, viz. Geographic, Information and System. Here the word 'Geographic' deals with spatial objects or features which can be referenced or related to a specific location on the earth surface. Likewise, the word 'Information' deals with the large volume of data about a particular object on the earth surface. The data includes a set of qualitative and quantitative aspects which the real world objects acquire. The term 'System' is used to represent systems approach where the complex environment is broken down into their component parts for easy understanding and handling but is considered to form an integrated whole for managing and decision making.

2.1 Visual Interpretation

Both aerial photographs and satellite imageries are interpreted visually. Photogrammetric is the science which studies interpretation of aerial photographs. To interpret aerial photographs, a number of sophisticated instruments such as pocket stereoscope, mirror stereoscope, the plotter are used in photogrammetric for measuring area, height, slopes of different parts of earth photographed and also for plotting different objects/themes from aerial photographs. Satellite image interpretation is an art of examining images for the purpose of identifying objects and judging their significance. Information extraction from imageries is based on the characteristics of image features, such as size, shape, tone, texture, shadow, pattern, association etc.

2.2 Digital Interpretation

Digital interpretation is popularly known as 'Image Processing'. Image processing deals with image correction, image enhancement and information extraction. Image correction means to correct the errors in the digital image. Errors are resulted due to two reasons. When errors are resulted due to defect in sensor it is called radiometric error. After image correction and contrast enhancement, information's are extracted from the digital image, which is the ultimate goal of an interpreter. In Information Extraction, spectral values of

pixels are analyzed through the computer to identify objects on the earth surface. In this way, different features of the earth are recognized and classified.

3. LITERATURE SURVEY

The Background algorithm is the easiest algorithm to manage and to learn besides the best optimal performance of object detection. Background subtraction algorithm is an algorithm that traces out any object that acts as a foreground model while ignoring or removing the background image called a background model. The limitation of the background subtraction algorithm is that only works when an object is a move in respect to time.

Background subtraction was the essential part of removing the unwanted background, this will increase the chance of the machine to identify the object much accurate.

The region of Interest, or commonly abbreviated as ROI, is a region that will be considered as the region of the wanted area while ignoring the outside of the region, called background. To detect the availability of parking space, the detected region must be located the same as the region of interest

4. PROPOSED SYSTEM

4.1 Data Acquisition

With a focus on end-user data safety and integrity, the HEAR location platform is first to market in sharing real-time vehicle sensor data between multiple car manufacturers. By combining open data with proprietary sources and technologies including LiDAR, car sensor data and AI, the HEAR location platform offers a uniquely complete location data set.

4.2 Preprocessing

The raw images captured by cameras may contain noises, the lighting of workspaces, and the flickering of light sources. In preprocessing include filtering out the noises, images conversions into different colour spaces, blurring the image, edge detection, line detection, circle detection.

4.3 Validation and Publishing

The dataset is validated and the results are published.

(i) End-to end insights
(ii) User and device management
(iii) Critical notifications

5. OUTPUT

Following images shows the output of the proposed work.

Fig. 1: Original image

Fig. 2: After processing the image

6. REFERENCES

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