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Short Communication

Classification of High Resolution Using Remote Sensing Technique

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DESCRIPTION

An image is the visual interpretation of a physical scene or objects acquired by an electronic device. The images give abundant information about the objects in it, which will be helpful for making useful outcomes in complex areas, like telecommunication, remote sensing, medical image processing and many more. In this technology era, decisions can be made quickly and effectively by storing and processing the images in the computer system. The images are processed by the computer system in the digital format [1]. The images captured by the electronic device are transformed into digital form by the digitization process. The digital image is represented by a 2D array in the forms of rows and columns. The single point in the image is called a pixel. Each pixel has the value of the intensity or brightness. Based on the intensity values, the images can be broadly categorized as the black and white image, grayscale image and color image [2]. The black and white images have a 2-bit intensity value 0 and 1. The grayscale images have 8-bit intensity values ranging from 0 to 255. The color images have 24-bit intensity values ranging from three different colors, namely Red, Green, and Blue.

Digital image processing performs the following fundamental operations in digital images, like image formation, image enhancement, image restoration and image compression [3]. The process of converting the continuous signal values to the digital value through sampling and quantization is called as image formation. The process of improving the visual appearance of the digital image through enhancement techniques is called image enhancement. The process of reducing the degradations in the images and improving the quality of the images is called image restoration. The process of compressing the image through information redundancy theory and improving the memory of the computer system is called image compression [4]. Apart from the fundamental operations of digital image processing, the following operations can also be performed based on the requirements. They are Image Segmentation, Image Classification, Image representation and description. They produce the image attributes as the outputs. The segmented images are represented in terms of boundaries and regions are called image representation, and the process of describing them through features are called image description. The process of assigning appropriate classes for the segments is called the image classification [5]. Digital image processing can be applied in many areas, like remote sensing, medical image processing, pattern recognition, video surveillance, machine learning, artificial intelligence, computer vision and many more. The nature of the image for each application is different.

CONCLUSION

Remote sensing is the process of recording information about the object at a certain distance without having any physical contact. It can be in the form of images called remote sensing images. The remote sensing images are acquired by the sensors, which emit electromagnetic radiation or acoustic energy. Though the electromagnetic spectrum is large, all the wavelengths are not equally used effectively in remote sensing. The term λ is used to express the electromagnetic energy. Based on the characteristics of the materials, all matters emits energy in the electromagnetic spectrum, which is used to identify the target objects. Most of the remote sensing images are captured by using the ultraviolet wavelength and infrared wavelength.

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