Digital Surf Imaging

Name:

Course:

Tutor:

Date:

Introduction

Digital surf imaging refers to the analysis of two or more similar images of an object or visual scene. Uses for such an analysis are important in a number of areas, including space exploration, robotics, computer programming, military defense, photography, and medicine. For that reason, literature is needed to explain how to conduct digital surf imaging. The literature must be designed in a logical, easy to follow format to facilitate the reader's understanding in what is otherwise a complex and complicated area of specialty.

Basically, the way digital image processing works is to follow a procedure for identifying sections in an image that remains constant regardless of how the image itself might be changed or transformed. This can be accomplished by determining the points of interest when the image is contained in a linear box space. In that mode, the original image is then analyzed with a variety of filters set at different points of measurement. This process is appropriate for calibration of cameras, developing three-dimensional images, registering images, and, of course, in the recognition of objects within images. This newest form of digital imaging is preferable to previous forms because it utilizes a wider range of sources for data input. This helps to lower or alleviate previous issues such as noise distortion and pixilation, as well as other problems involving processing. Moreover, it can be used for modeling of objects in multidimensional systems (Zhu, Rangayyan, & Elis, 2011).

Problem Definition

The purpose of this study is to understand how to conduct digital surf imaging. This includes various techniques used for doing so, applications that have been developed for that purpose, its practical purposes, as well as it strengths in comparison to prior technologies that have been used to identify objects located within similar images. It is also designed to address the practical application of using digital surf imaging as it applies to capturing images with the use of cameras, recognizing images, registering of images, intelligent transportation systems, and the use of film-making and the creation of three-dimensional images.

Literature Review

Previous digital technology, though new and exciting at the time it was introduced, had issues with pixilation as well as size, transportability, and lack of ability to develop three-dimension images. The digital imaging industry continued to build more advanced cameras with increased focus for clearer images. These cameras also came with the ability to transfer images to computers. Applications within cameras were developed so that some editing, such as panning or stitching was possible. In addition, other applications were developed to add more effects to images. Continued improvements and the need for practical application in a number of fields led to the development of digital surf imaging.

Digital surf image processing involves identifying sections in an image to extract as points of comparison among two or more images contained in the same sections (Schwartz, 2005). These sections can be thought of as shared objects within multiple images. The

shared objects are used as image descriptors. This is different than early strategies where an image was dissected on a grid and then grid sections were compared between images. This procedure was faster than the new procedure, but it had major limitations. Because images were divided along a grid, sometimes the essence of that part of the image was lost. It did not make sense visually without the rest of the image. These kinds of problems were successfully addressed with digital surf technology because patterns within the image were more predictable and imaging was clearer. Eventually, the advanced development of this technology also made the process faster, which had a positive impact on the cost of using it.

Design

According to Firmino, Duarte, and Ultramari (2011), digital surf image processing involves three major steps. First, sections in an image must be identified. Next, the neighbors of each section must be represented as vectors. The third step is then to match those vectors in the images that contain the designated sections. They also stress that the use of quantum mechanics is also important in understanding and in manipulating image effects. In addition, java programming is needed. The points of interest can be anything, but they must be distinctive in some way, such as in photometric or geometric dimensions. These might be sharp edges, for example. Then, the vectors for the points of interest can be compared.

Findings and Discussion

Digital surf imaging is continuing to advance to the point that an individual with no professional training or expertise in the comparison of similar images will be able to

utilize software applications to locate similar images on the Internet. Moreover, the everyday person will also be able to manipulate images and to add special effects, including the development of three-dimensional images. Not only will this technology be helpful to various fields of study including medicine, homeland security, artificial intelligence, computer technology, and advanced photography, but it will find its way into the ubiquitous lives of people everywhere. Moreover, as the technology becomes more common place and its uses expand, the cost of such technology will be lowered to the point that anyone can afford it.

Conclusion

Digital surf imaging has become a reality in a world where it is helpful to be able to identify common objects within similar images. Being able to develop a three-dimensional image, for example, aides in designing many kinds of tools and instruments used in building or bridge construction, in preparing for delicate surgeries, for analysis of aerial views to help in cognizant activities, and in testing theories and in understanding concepts. No doubt, this valuable area will continue to evolve, with the development of many more applications for its use.

References

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