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Extraction of Vanishing Part in Under Water Image Using Pixel Based Analysis Technique

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***Abstract*-** Underwater extracted images get affected by various noises and atmospheric conditions based analysis technique in under water. In our proposed system Pixels of the images can merge as per the coordinates of the images of another side get identified based on the coordinates of the image depending upon angle of directions, number of pixels, coordinates of the pixel. It get identified by various methods using pixel priority for denoising and enhancement..Adaptive attenuation curve coordinates identifying and Rypro methods are used for angle of visualization of vanished part of image. It helps to identify original vision of the image.

Keywords: pixel based analysis, adaptive attenuation curve

I.INTRODUCTION

In under water many things which got immense inside the sea and ocean. such as making archeological surveys, accidental ships searching, accidental aircraft searching, marine acoustic research, undersea landslide research. which was presume by today's researchers. to identify the environmental condition such as natural disasters like flood, cyclone ,undersea volcano's, aquariums, fishing for Scrutinizing this conditions, Many devices and methods are used for generating the output for monitoring the ocean conditions. The output generated by the devices may vary as per the performance and various environmental conditions for generating a accurate output. The sensor image condition is not in a proper condition to extract clear image. one side of the image will be identified clearly in under water but some parts will vanished in underwater for extracting original image. we are using pixel priority based selecting method for vanishing part image to get the enhanced the quality of 360 degree of image.

LITRATURE SURVEY

For visualize the image inside the water ,We need analyze what are the previous methods followed in image extraction. In the paper of (1)Sung-Wan Kim, Hyoung-Suk Choi using image filter processing under seismic excitation tank water can be measured in that imagessomeimages have (2)Low illumination to reconstruct the image using a method deep convolution neural networks by Huimin Lu, Yujie Li ,For (3) De-scattering Imaging in under water using Laser Field based on the paper Houde Wu, Ming Zhao after getting the original position of the image we need to get the clear vision of the image.(4) Enhancement process will takes place by conditional generative adversarial network based on a paper Miao Yang, Ke Hu ,Yixiang Du in some images we cannot able to restore the original position but based on the algorithm like (5) Diffraction bounded optimization algorithm with dark channel prior based on the paper of Ajisha Mathias, Dhanalakshmi Samiappan. We get clear image restoration technique.(6)To restore the original image we need to improve the quality of enhanced image. It can executed by histogram equalization and wavelet transform based on the guidance of Xi Qiao,Jianhua Bao (7) Satellite and Underwater Sonar Image Matching Using Deep Learning M. M. Dos Santos, G. G. De Giacomo, P. Drews and S. S. C. Botelho there are various techniques used for under water image enhancement here we use (8)CLAHE based Enhancement technique for image enhancement based onS. Anilkumar, P. R. Dhanya, A. A. Balakrishnan and M. H. Supriya. (9)Image Restoration in underwater can executed by Adaptive Attenuation-Curve method introduce in the paper Prior Yi Wang, Hui Liu, and Lap-Pui Chau,(10) An

object-based SAR image iceberg detection algorithm applied to the Amundsen SeaMazur, A. K., Wåhlin, A. K., & Krężel,.Another efficient method for underwater image restoration is nonlocal variation method used by Hou, G., Pan, Z., Wang, G., Yang, H., & Duan, J, Another important method water image restoration is (11)visual quality-aware method implemented by W., Nascimento, E. R., Barbosa, W. V., & Campos, M. F. MUsing light propagation image restoration will takes place.

II. ANGLE OF UNDERWATER LIGHT REFLECTION

In under water there are many lights will scatters importantly sunlight but the line of reflection will vary as per the particles present in the water and the absorption will takes place based on the line of sight the intensity will vary as per the x and y axis .the nearest point can be enabled by the camera and the process will takes place . the angle of reflection will vary as per the the intensity of the light

In underwater image processing there are various challenges in faced by the researchers they are limited range of visibility low contrast, on-uniform lighting, bright artefacts, noise, blurring, diminishing colour it can be managed by various algorithms. Some images who images which get buried inside the water.

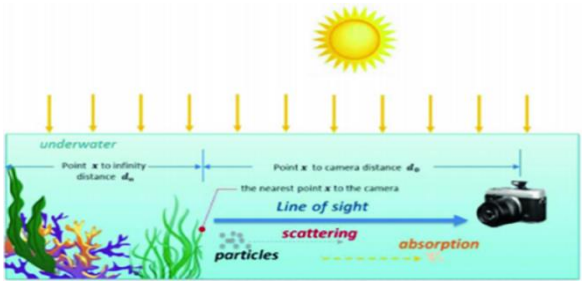


Table (1.1) Angle of reflection in underwater

WAVELENGTH OF LIGHT:

In underwater the wavelength of light will be varied. Some light will depend upon the depth of the underwater violet, blue, pink, orange, green this are the lights which travel high depth inside the water .The intensity will vary as per the depth of the water. In this light the blue light will travel highest wavelength inside the because the scattering of sunlight creates blue light inside the water that will creates high intensity to the blue light which travels under the depth of the water apart from the depth artificial lightening will be used for the image inside the depth of the ocean .it can be used for analyzing the depth of the sea.

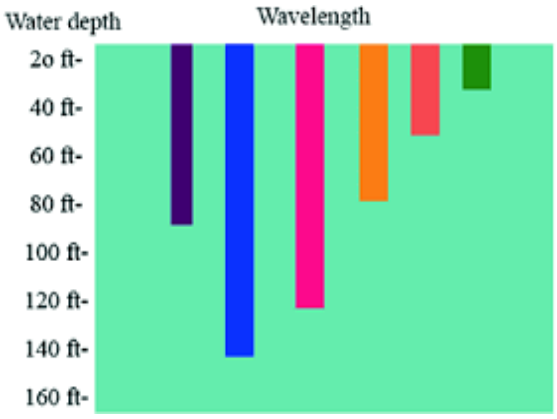
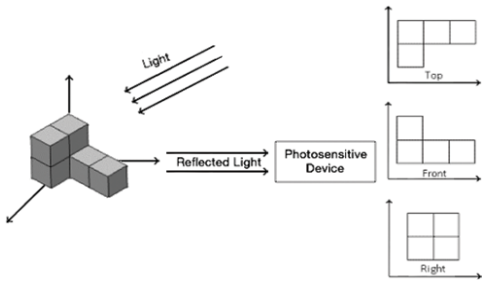


Table (1.2) colors wavelength

PROPOSED MODEL

In a proposed model the underwater images get scanned by acoustic sonar waves it will monitor the depth, pressure and position of the object .In some objects get buried inside the sea the acoustic waves will monitor the upper portion of the objects. It can be complicated to identify the original image of the object but in our system the position of the object placed can projected by pixel coordinate system. Depending upon the pixel the buried image can projected by angle of projection it can easily identified the 360 degree image. Already the front end and back end gets identified in fig(1.2.1)



Fig(1.2.1) angle of projection

III.ADAPTIVE ATTENUATION CURVE

In this algorithm is used to reduce noise In the underwater environment, before we want to analyze what are the sources that affecting the image. In underwater images the depth d(x) the water surface which decides the clarity of the image. The transmission *t (x)* of light in the atmosphere varies in

every depth of the water. It creates variation in the pixel wavelength and creates stability in attenuation coefficient β_c,. depending upon the transmitting elements the pixel value will be varied as per the depth., Every pixel in the image having individual colors $I_c(x)$ this colors will having some space of cluster varying as per the depth of the camera.

$Ic(x) = tc(x) \cdot Jc(x) + (1 - tc(x)) \cdot Bc, c \in \{r, g, b\}$

x -> pixel coordinates

c ->colour index

I -> input image

J ->scene radiance, i.e., the clear image

B -> water light detected by illumination

t ->limited transmission

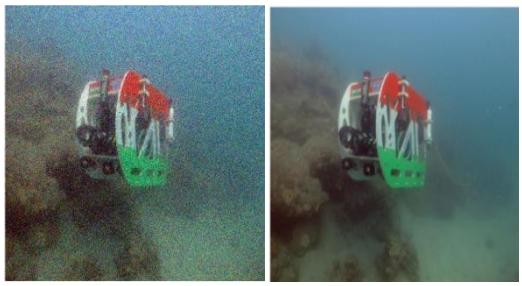


Fig (1.3) Denoised submarine image

Algorithm: Steps used for the extraction of noiseless under water image.

I. Collection of underwater images

II. Denoising the images of under water.

III. Select The Place Of Enhancement And Denoising.

IV. Initiating Pixels of the image

V. Determining the Coordinates Of Pixels

VI. Adjusting the Pixel Coordinates And Identified

VII. Output image

IV. PIXEL BASED ANALYSIS TECHNIQUE

In an underwater image can enhanced by number of pixels available in that input image some image has very high pixels and some images have low pixels based on the size and position of the image. we have to collect the number of pixels available subdivide the pixels into two categories. First category is pixel which was visible to the camera and another one is pixel which was invisible or buried inside the sea. Based on the first categories we collect data of the pixel which was invisible to camera. Select the pixel for the spontaneous position in first category. Subdivide in to several segments in Fig(1.4).

Every part of the images is made up by pixels by connecting the pixels we identify the coordinates of the image based the coordinates. We identified the vanished part of the image. We optimize the categories of pixels to identify the vanished part. Based on the coordinates of the pixel position we identified the direction of the image.

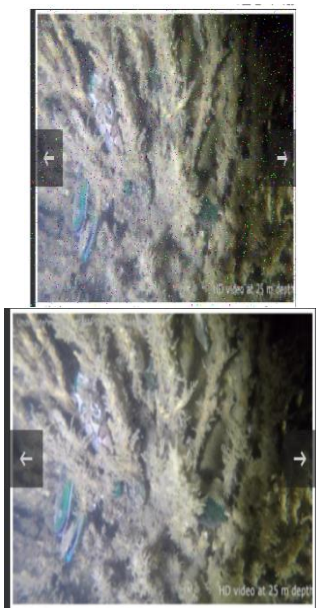
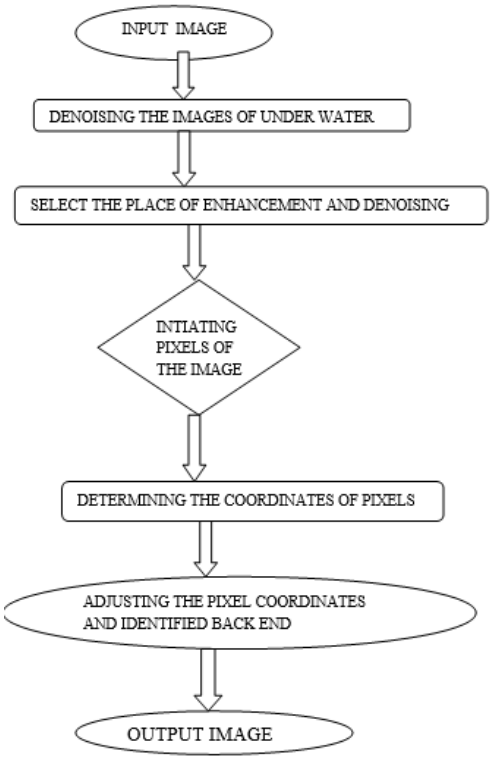


Fig (1.4) Underwater plants denoised image

Each part of the image may splitted in to various segments depending upon number of pixels available in that image. Based on the segmentation the denoising will process . After selecting the priority pixel the Mean of the image get identified for denoising and enhancement.

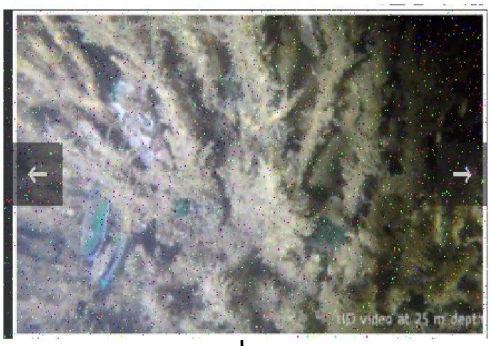
V.FLOW CHART

For identifying the coordinates of the image. We enable the following steps to recover the original position of the image. Pixels available in the image is used to identified the coordinates and position of the image vanished inside the water.



(1.5) Flow chart of vanishing image identification

VI.EQUATIONS AND OUTPUT



3	4	6	8	9
2	5	7	9	4
1	3	5	7	9
3	5	6	2	2
2	4	6	8	9

5	7	9
3	5	7
5	6	2

The image may process in the given area. We align pixel number for each pixel consists of nearest path of connection based on the path the priority may enabled in the image. that area may considered as the value of the pixel. The pixel available in the image is also represent the position of the image.

VII.SIMULATION RESULTS

Gray value	Counting of pixel number
0	2
50	2482
100	5682
150	4346
200	6000
250	4265
254	1423

Output :(histogram)

Gray value	Counting of pixel number
0	4582
50	4636
100	4243
150	5746
200	5424
250	4842
254	4548

Output(equalized histogram)

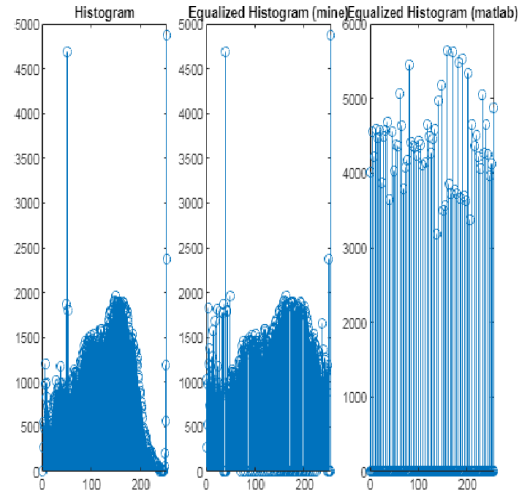


Fig (1.6) Histogram equalization

In Fig (1.6) the histogram equalization the X axis represents the number of pixels and Y axis represents the gray scale. In normal histogram the pixel

For equalize the image the gray value will decided by the pixel number every pixel number has certain gray value the gray value will decide the accuracy of the image. Some images the gray value is zero. the pixel number will increased when the median of the grayscale is 150 total number of gray scale value can be analyzed by 255 gray scale value but the pixel number should be in a random manner.

VIII.CONCLUSION

In our paper we proposed a method based on pixel of the image depending uon pixel analysis Normally in under water image processing the image get identified by acoustic signal based on their visualization but in our method based on the pixels the another side of the image can also be get identified. Depending upon the enhanced part of the image. we Identifying the image coordinates using adaptive attenuation curve method based the coordinates of the pixel another side of image get identified. Depending upon the angle of coordinates using identifying another part of the image and the image get 360 visualization. Adaptive attenuation curve algorithm in for extracting vanished part of image

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