COLOR BALANCE AND FUSION FOR UNDERWATER IMAGE ENHANCEMENT

GUIDE

PROF.NATHEERA BEEVI.M

THASLIMA LATIF

S6 MCA

ABSTRACT

Introducing an effective technique to enhance the images captured underwater and degraded due to the medium scattering and absorption.The method is a single image approach that does not require specialized hardware or knowledge about the underwater conditions or scene structure. It builds on the blending of two images that are directly derived from a color compensated and white-balanced version of the original degraded image. The two images to fusion, as well as their associated weight maps, are defined to promote the transfer of edges and color contrast to the output image.
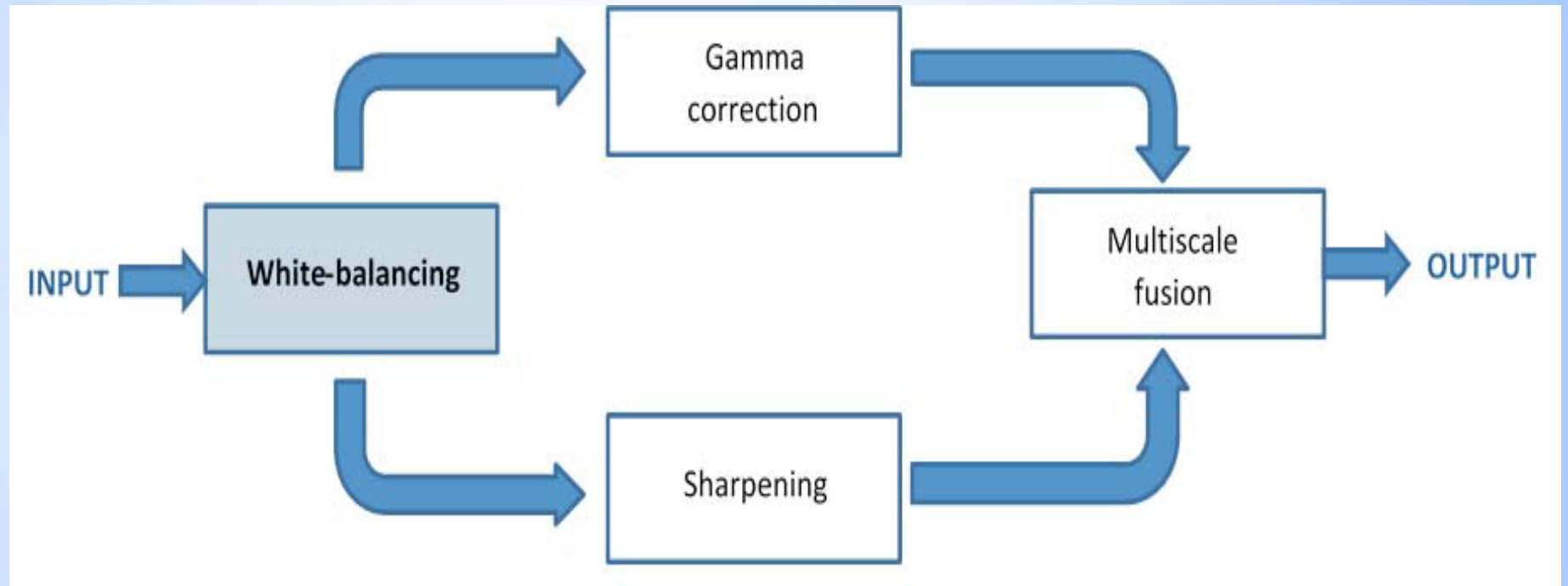
TRADITIONAL ENHANCING TECHNIQUES

- GAMMA CORRECTION

- HISTOGRAM EQUALIZATION

- SPECIALIZED HARDWARES

- POLARIZATION FILTERS

- STRATEGIES USING MULTIPLE IMAGES

TECHNIQUES USED

- WHITE BALANCING
- IMAGE FUSION

WHITE BALANCING

➤ White-balancing aims at improving the image aspect, primarily by removing the undesired color castings due to various illumination or medium attenuation properties.

IMAGE FUSION

This step aims at enhancing the image appearance by discarding unwanted color casts caused by various illuminants.

➥ *first input* we perform a gamma correction of the white balanced image version.Gamma correction aims at correcting the contrast.

➥ *second input* that corresponds to a sharpened version of the white balanced image.

BLENDING USING WEIGHT MAPS

The weight maps are used during blending in such a way that pixels with a high weight value are more represented in the final image.

➢ Laplacian contrast weight

➢ Saliency weight

➢ Saturation weight

ENHANCEMENT

This method can be applied to enhance foggy images

EXPECTED OUTPUT

REFERENCES

❖ **Vision enhancement through single image fog removal**

By   Md. Imtiyaz Anwar ⇑, Arun Khosla (ELSEVIER 2016)

❖ **Removal of the Fog from the Image Using Filters and Colour Model**

By Rathod Sejal, Patel Mitul (IJRET)

THANK YOU