Computer Vision
Project Proposal
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Underwater Image Filtering: Project Proposal

Since the dawn of human existence, exploration of the planet Earth has been a priority; in order to live and thrive, a species has to know everything possible about its habitat. Despite this ongoing search of the unknown, most of the Earth, its oceans, remain unexplored, and while the ever advance field of photography has done quite a bit to help this cause, water's properties of scattering and absorption of light have hindered any advancement greatly, until now.

Ancuti et. al, in her paper, *Color Balance and Fusion for Underwater Image Enhancement*, discusses a new algorithm for clearing away the haze of underwater images. Current methods of clearing up underwater images involve filtering and blending multiple images, and the results are still often unclear. Ancuti et. al proposes a single imagine algorithm that involves white balancing the image, then creating two copies of the white balanced image, sharpening one image and using gamma correction on the other, then blending these two copies together. The results using this method are substantially better than that of any other proposed to date. With this method of filtering, the limitation of our exploration tools are nonexistent.

References:

Ancuti, Codruta O, et al. "Color Balance and Fusion for Underwater Image Enhancement." IEEE Journals & Magazine, IEEE, ieeexplore.ieee.org/document/8058463/citations.