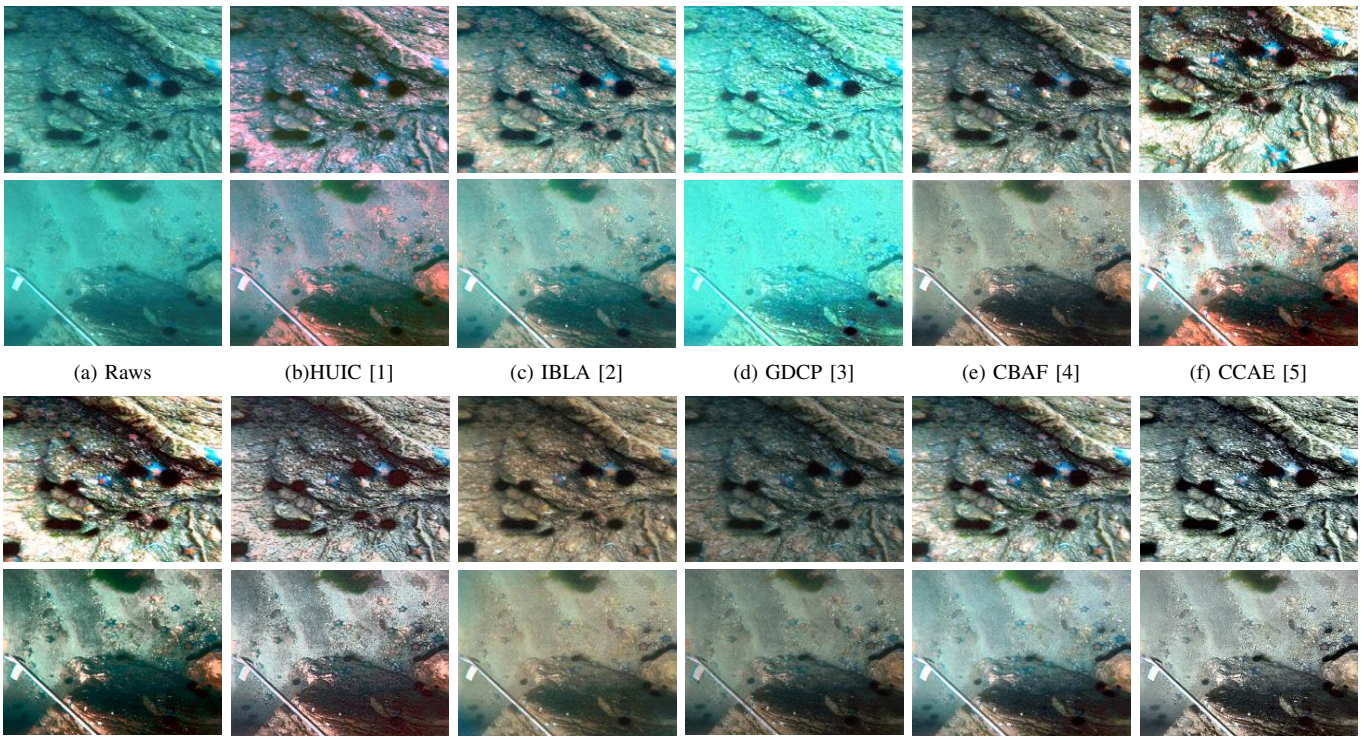
Underwater Image Enhancement via Minimal Color Loss and Locally Adaptive Contrast Enhancement (Supplementary Material)

Weidong Zhang, Peixian Zhuang, Haihan Sun, Guohou Li, Sam Kwong, *Fellow, IEEE*, and Chongyi Li



(a) Raws (b)HUIC [1] (c) IBLA [2] (d) GDCP [3] (e) CBAF [4] (f) CCAE [5]

(g) CCBE [6] (h) BRUIE [7] (i) FUnIEGAN [8] (j) Water-Net [9] (k) UIEC^2-Net [10] (l) Ours

Fig. 1: **Visual comparisons on the Blue subset of the UCCS [11] dataset.** Our method effectively removes the blue tone and the image enhanced by our method exhibits high visibility and a natural appearance.

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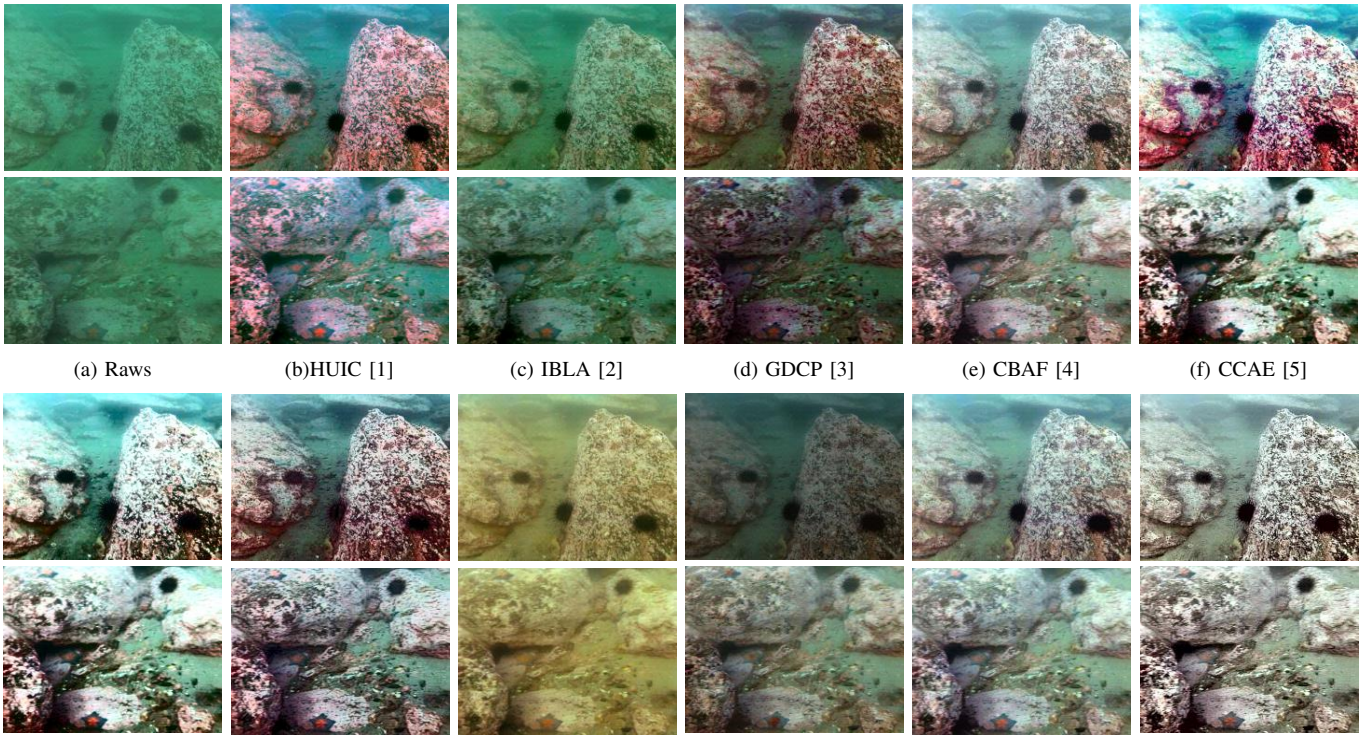
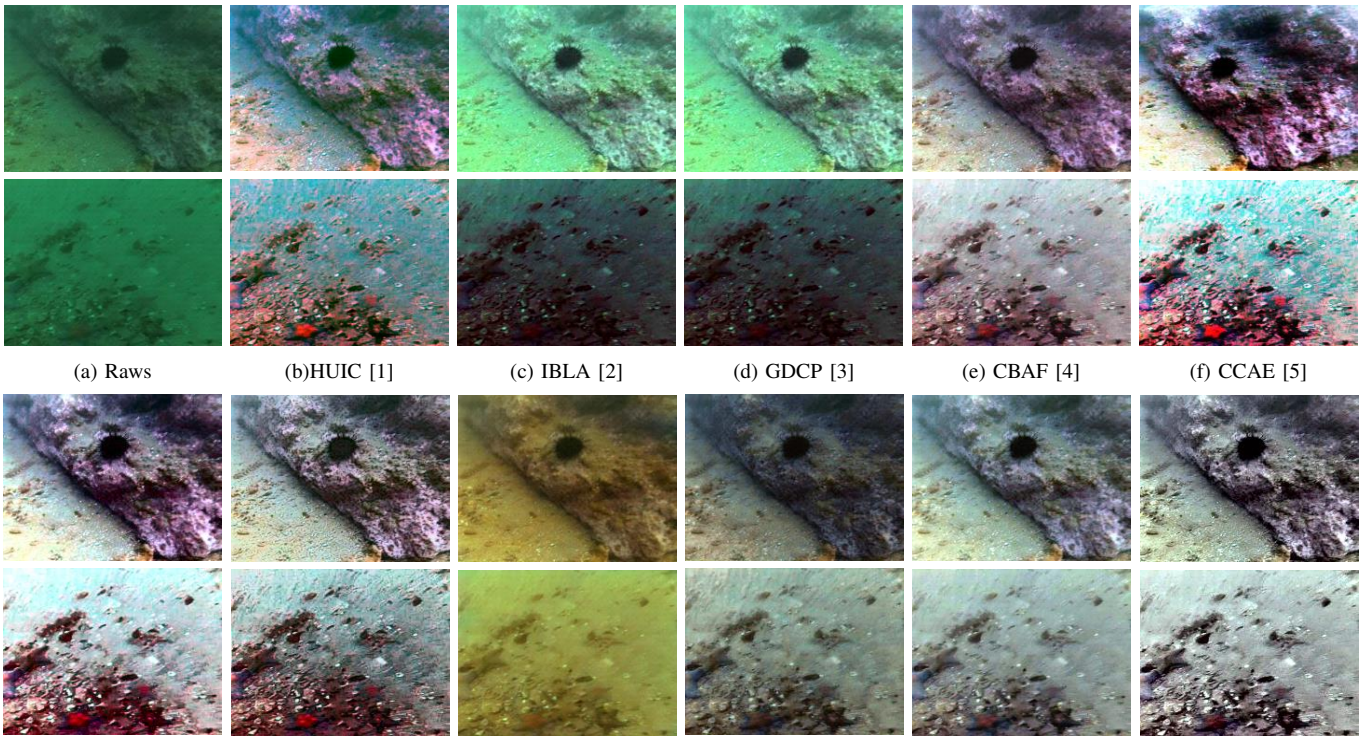


(a) Raws (b)HUIC [1] (c) IBLA [2] (d) GDCP [3] (e) CBAF [4] (f) CCAE [5]

(g) CCBE [6] (h) BRUIE [7] (i) FUnIEGAN [8] (j) Water-Net [9] (k) UIEC^2-Net [10] (l) Ours

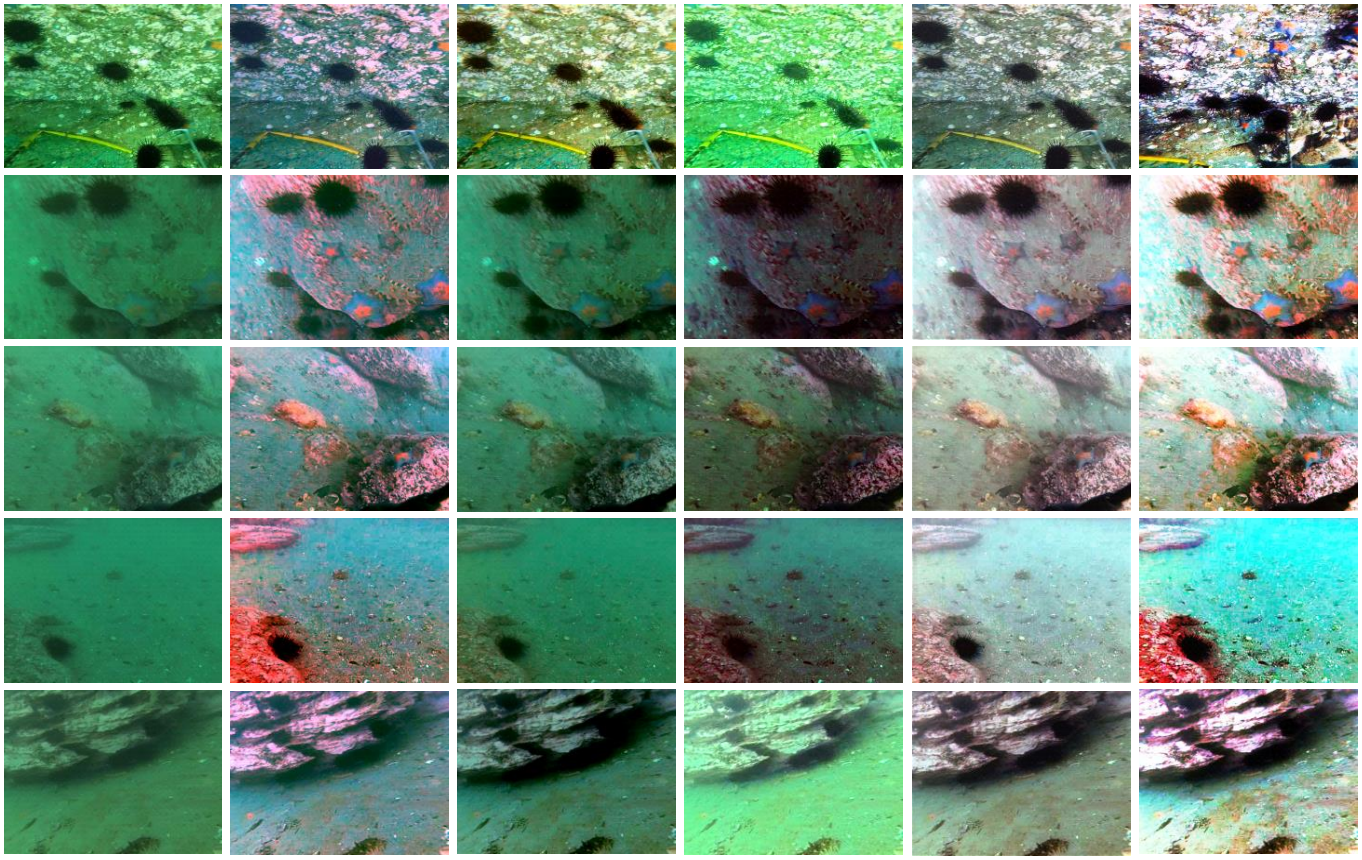
Fig. 2: **Visual comparisons on the Blue-green subset of the UCCS [11] dataset.** Our method effectively removes the blue and green tones, and the image enhanced by our method exhibits high visibility and a natural appearance.



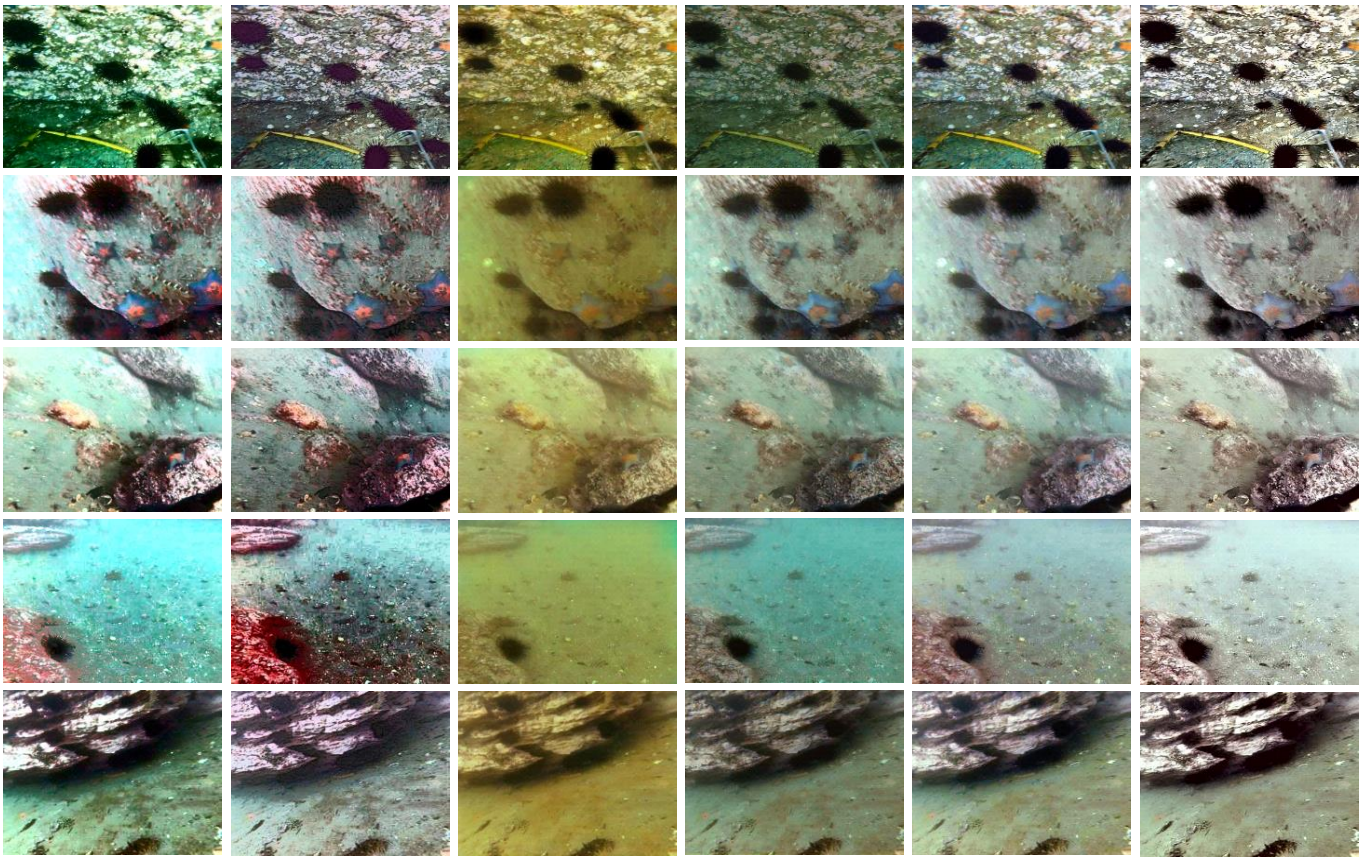
(a) Raws (b)HUIC [1] (c) IBLA [2] (d) GDCP [3] (e) CBAF [4] (f) CCAE [5]

(g) CCBE [6] (h) BRUIE [7] (i) FUnIEGAN [8] (j) Water-Net [9] (k) UIEC^2-Net [10] (l) Ours

Fig. 3: **Visual comparisons on the Green subset of the UCCS [11] dataset.** Our method effectively removes the green tone, and the image enhanced by our method exhibits high visibility and a natural appearance.

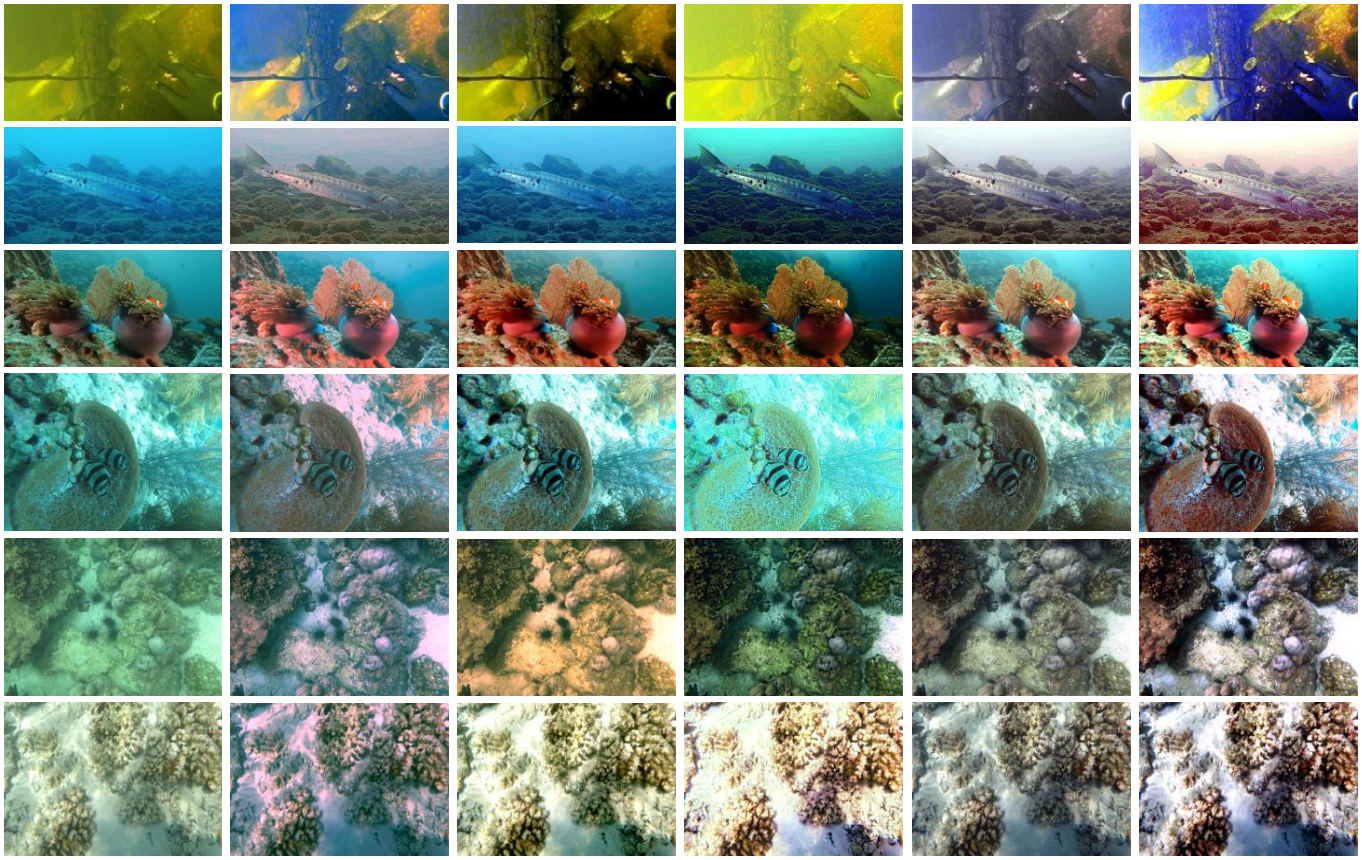


(a) Raws (b)HUIC [1] (c) IBLA [2] (d) GDCP [3] (e) CBAF [4] (f) CCAE [5]

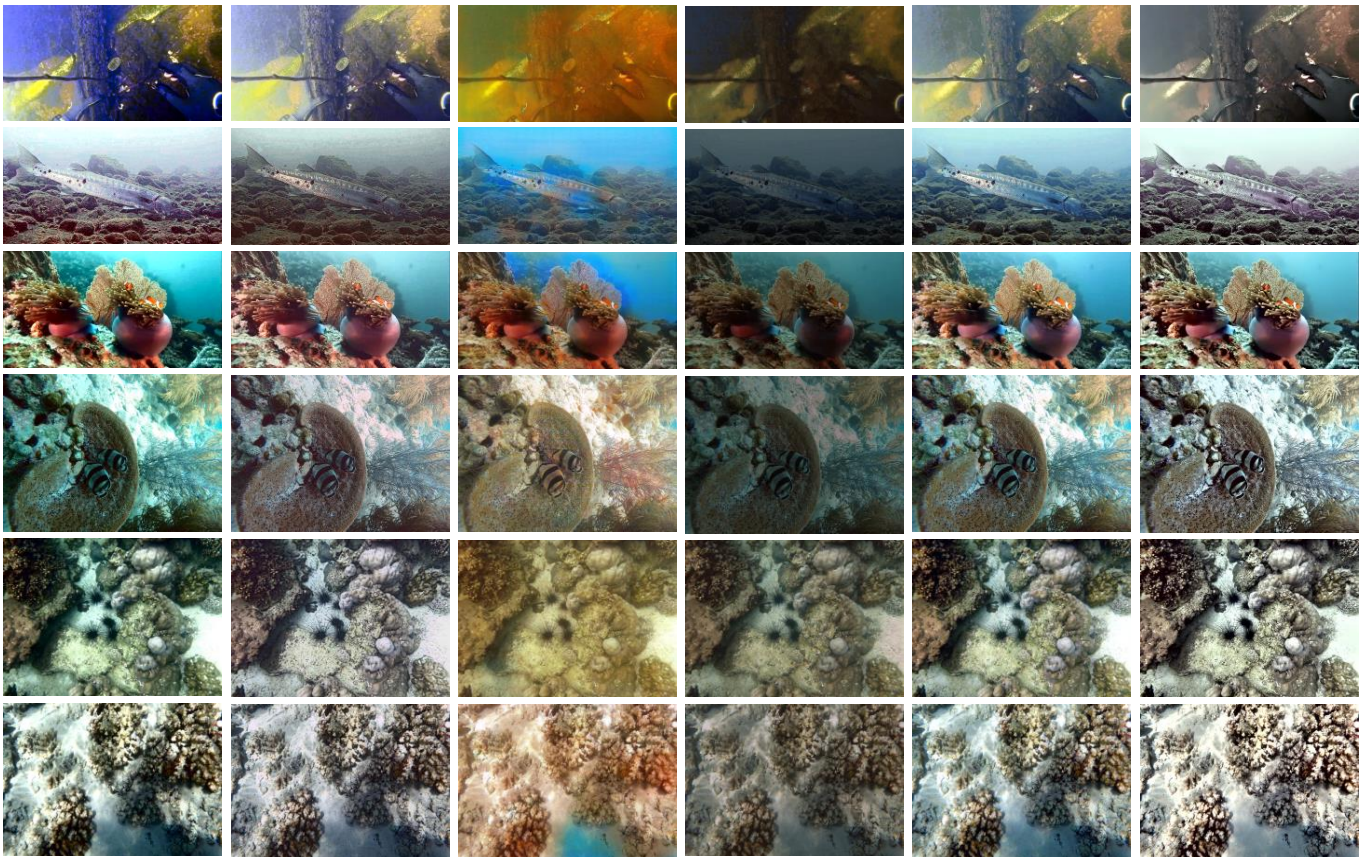


(g) CCBE [6] (h) BRUIE [7] (i) FUnIEGAN [8] (j) Water-Net [9] (k) UIEC^2-Net [10] (l) Ours

Fig. 4: **Visual comparisons on the UIQS [11] dataset.** From top to bottom: the quality levels of the five raw underwater images are A, B, C, D, and E, respectively. Underwater images of different quality levels enhanced by our method exhibit high visibility and achieve consistent quality improvement.



(a) Raws (b)HUIC [1] (c) IBLA [2] (d) GDCP [3] (e) CBAF [4] (f) CCAE [5]



(g) CCBE [6] (h) BRUIE [7] (i) FUnIEGAN [8] (j) Water-Net [9] (k) UIEC^2-Net [10] (l) Ours

Fig. 5: **Visual comparisons on the UIEB dataset [9].** From top to bottom are yellowish, bluish, greenish, low light, haze, and low visibility underwater images, respectively. Our method effectively removes the yellow, blue, and green tones. Our method also significantly enhances the underwater images of haze, low light, and low visibility.

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