Image Enhancement Based on Pixel Intensity Adjustment and Weinner Filter

Abstract – Image Enhancement is an important preprocessing step of digital image processing like Segmentation, Object detection, Face detection, Feature extortion. The digital image may contain noise in this case noise reduction operation will be performed to remove noise but in the non-noisy image, by performing filter operation the non-noisy image will be blurred. To ensure robustness we propose a noise detection method to distinguish between noisy and non-noisy images and apply noise removal filters only on the noisy image. The Same algorithm does not work properly in the lowlight and non-lowlight images. To overcome this situation we propose a detection method to detect lowlight and non-lowlight image then applying proposed lowlight image enhancement in lowlight image only. We also propose a contrast enhancement algorithm that will be performed all kinds of images in general. So we are trying to represent a robust image enhancement technique that can be applied to noisy non-lowlight, noisy lowlight, non-noisy non-lowlight, and non-noisy lowlight image.

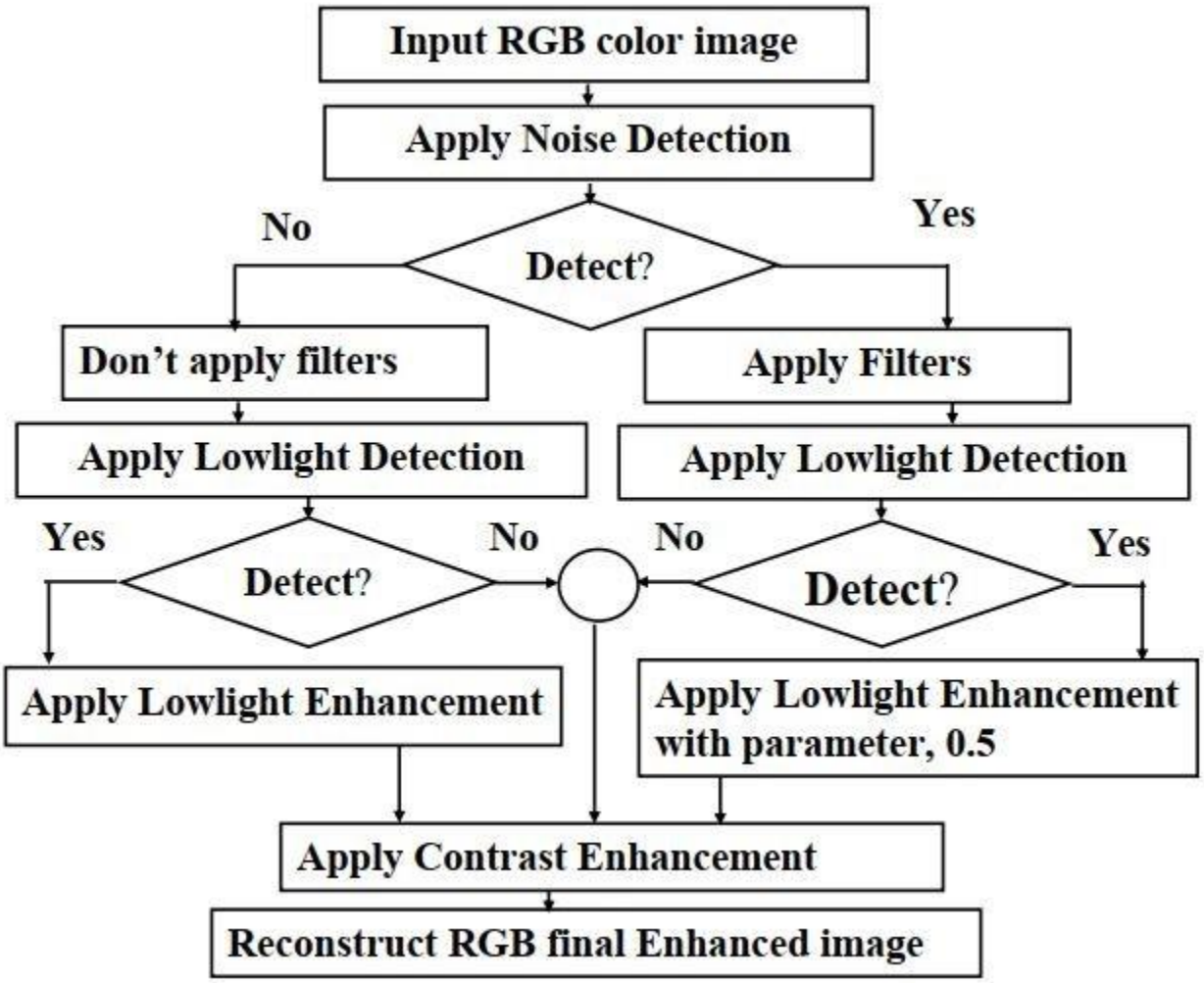
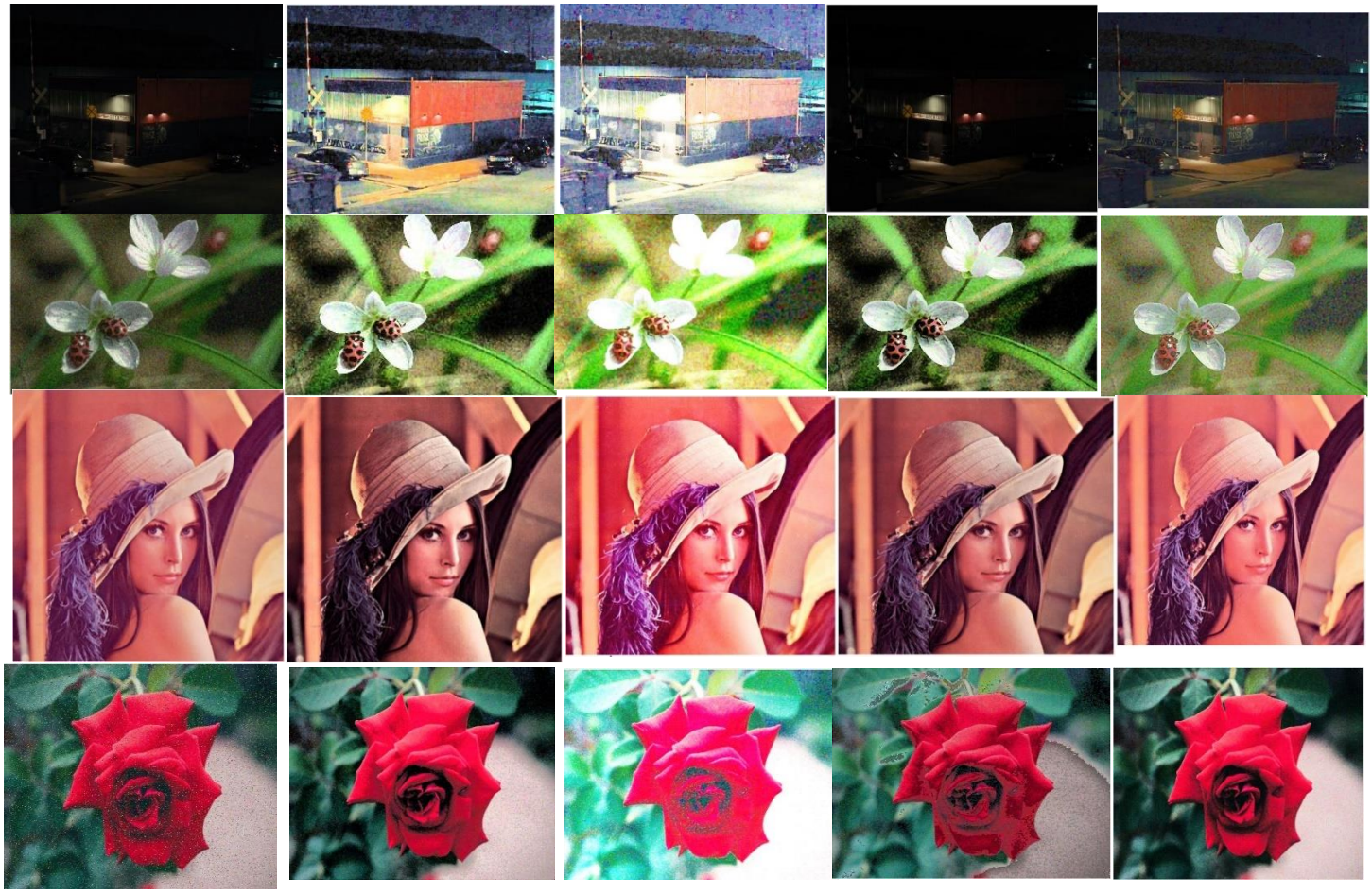


Figure 1: Full project flowchart

A. Noise detection method: I have implemented totally unique noise detection method.
B. Low light Check and enhancement: Same as noise detection method.
C. Contrast Enhancement: Same as noise detection method.
I have implemented my Thesis in MatLab

In the following section, I want to share my thesis output and comparison paper to prove my work's novelty

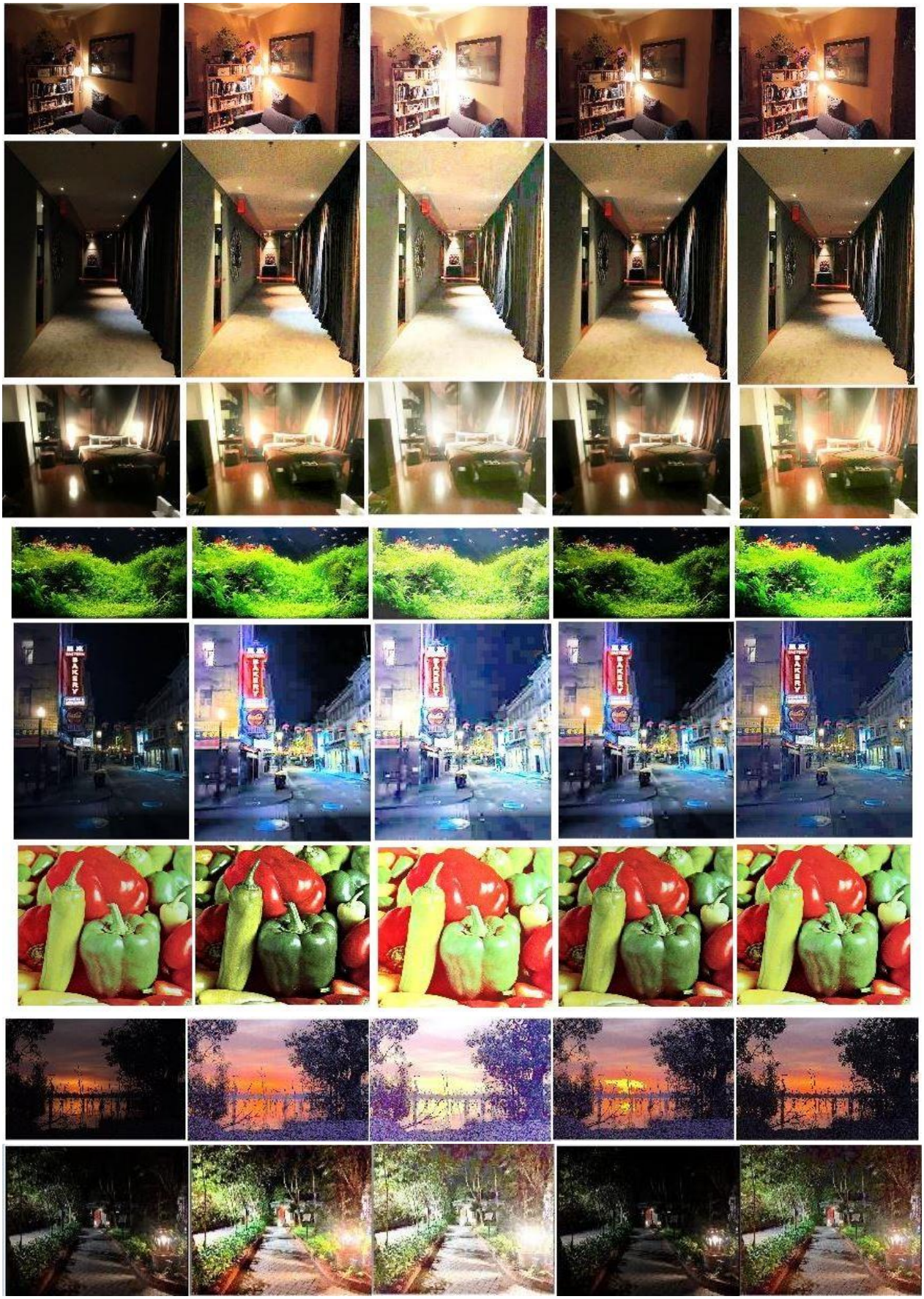


(a) (b) (c) (d) (e)

(a) Input image; (b) Apply Lee et al[1]; (c) Apply Yongping et al [2]; (d) Apply Banik et al [3]; (e) Proposed method;

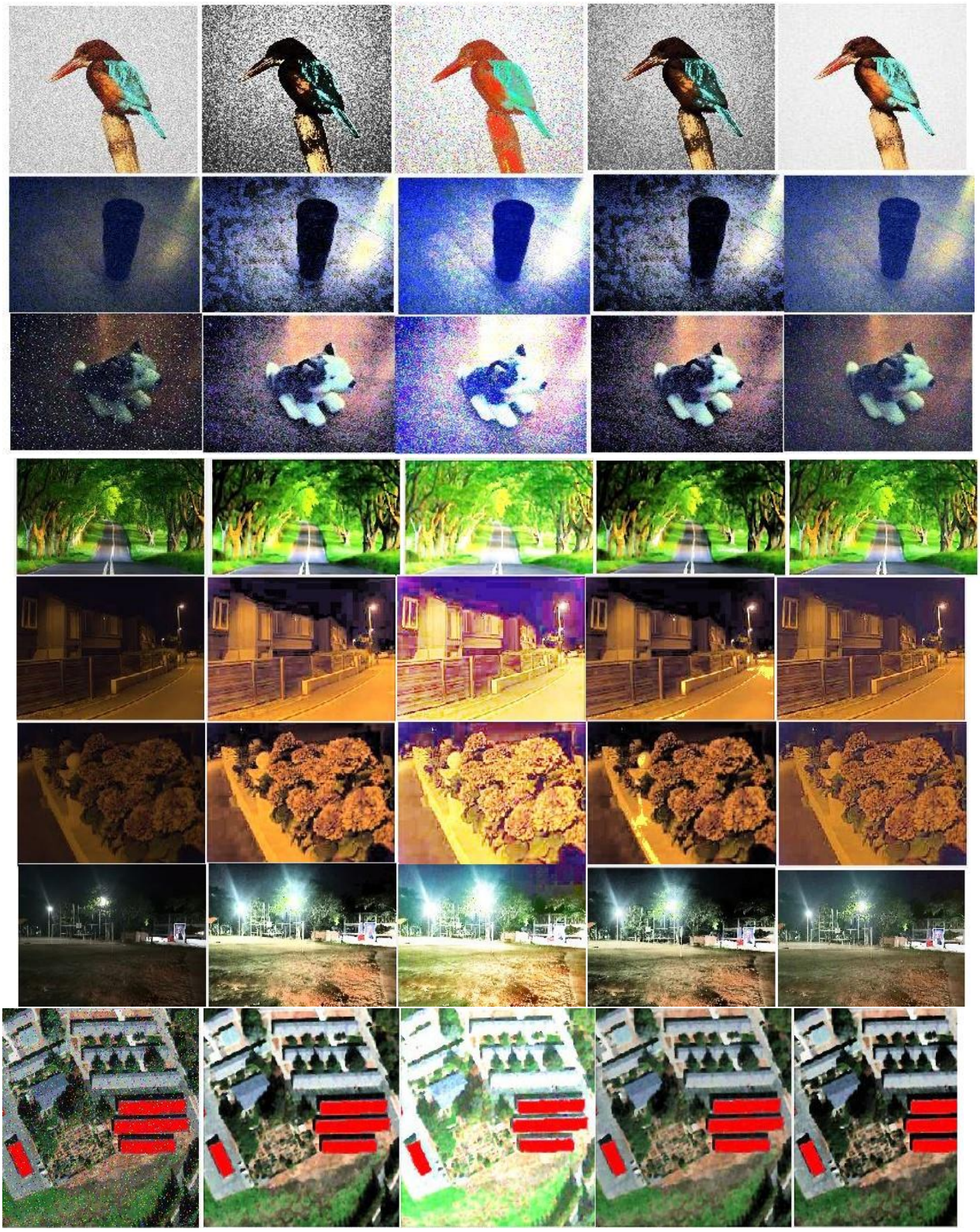
(a) (b) (c) (d) (e)

(a) Input image; (b) Apply Lee et al[1]; (c) Apply Yongping et al [2]; (d) Apply Banik et al [3]; (e) Proposed method;



(a) (b) (c) (d) (e)

(a) Input image; (b) Apply Lee et al[1]; (c) Apply Yongping et al [2]; (d) Apply Banik et al [3]; (e) Proposed method;



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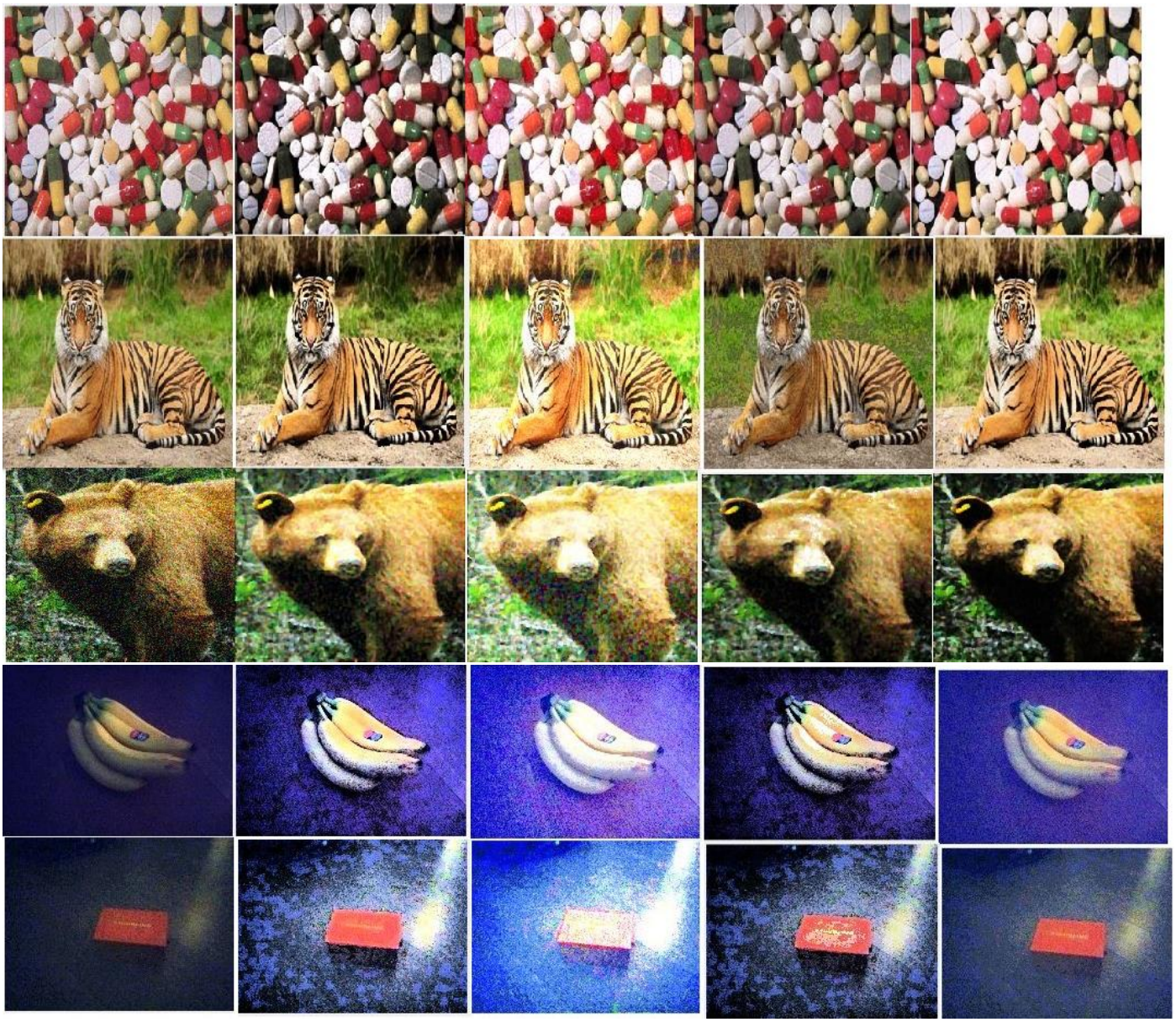

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V. REFERENCES

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