Image Processing Labs

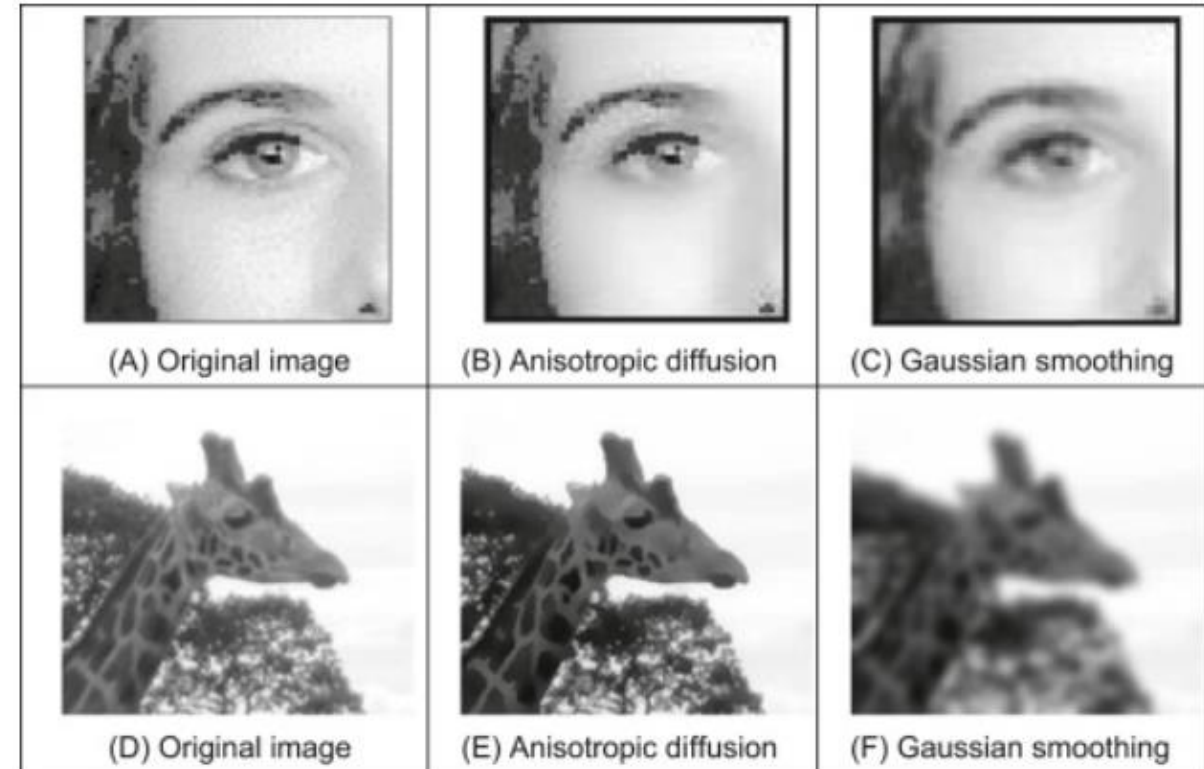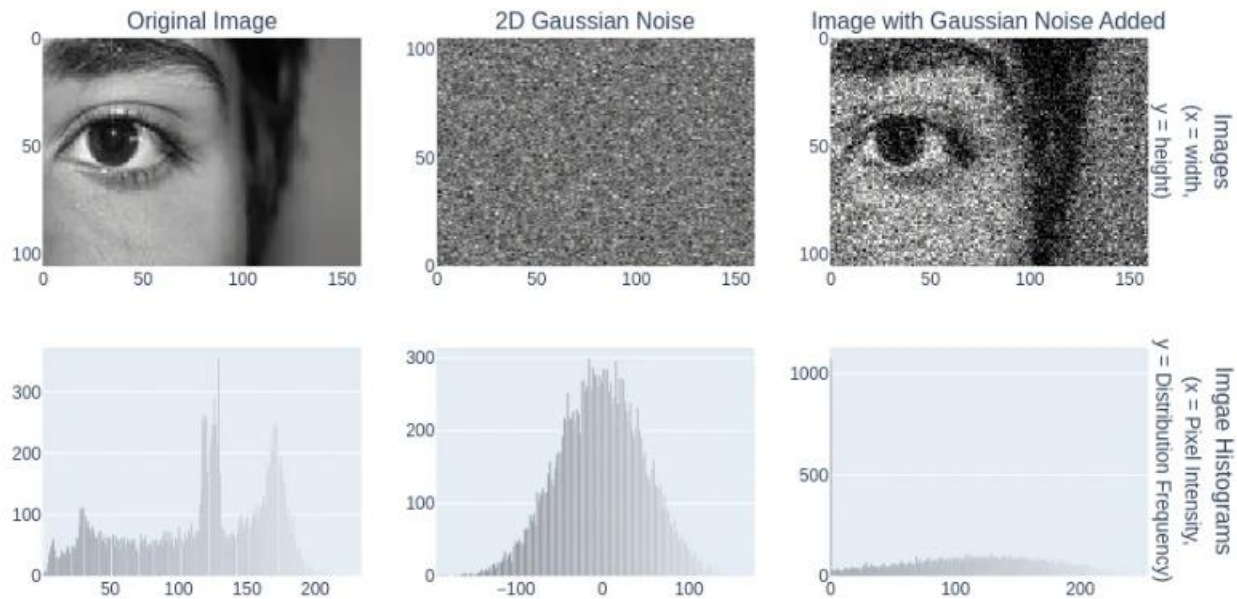**Yangxintong Lyu, Xinxin Dai, Ran Zhao, Olivier Ducastel**

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Ex11 – Anisotropic Diffusion

- Gaussian noise can arise due to sensor limitations, low signal strength, poor illumination, electronic interference, …

Original Image / 2D Gaussian Noise / Image with Gaussian Noise Added

(A) Original image (B) Anisotropic diffusion (C) Gaussian smoothing
(D) Original image (E) Anisotropic diffusion (F) Gaussian smoothing

Ex12 – Salt and Pepper noise

- Salt and pepper noise refers to a contamination with black and white pixels. It can originate from errors in image acquisition, transmission, or processing.

z=median([a b c d a f a e a])

Ex13-15 – Unsharp Masking

- Unsharp masking is a technique to enhance edges and fine details by boosting the high-frequency components of an image.

(a) Original image — Filtering → Blurred image

(b) Mask = Original image − Blurred image

(c) Sharpened image = Original image + Mask