Assignment 4

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# Image Down sampling:



Figure Downsampled Image without Preprocessing. Ringing Artifacts due to aliasing



Figure Downsampled Image After Gaussian Filter

A person sitting on the floor

Description automatically generated with low confidence

Figure Using Inbuilt Function PyrDown

# Edge Detection:

A black and white checkered surface

Description automatically generated with low confidence

Figure Sobel Prewitt on Checkboard.png

Shape, circle

Description automatically generated

Figure Sobel Prewitt on Coins.png

A black and white checkered surface

Description automatically generated with low confidence

Figure Sobel Prewitt on NoisyCheckerboard.png

Shape, circle

Description automatically generated

Figure Sobel Prewitt on NoisyCoins.png

A picture containing background pattern

Description automatically generated

Figure Laplacian on Checkerboard.png

Shape, circle

Description automatically generated

Figure Laplacian on Coins.png

A picture containing diagram

Description automatically generated

Figure Laplacian on NoisyCheckerboard.png

A picture containing background pattern

Description automatically generated

Figure Laplacian on NoisyCoins.png

The results show that Laplacian is susceptible to noise.

# Harris Corner Detection

A picture containing black, white, dark, outdoor object

Description automatically generated

Figure Original Checkerboard.png

![Icon

Description automatically generated]()

Figure Downsampled Checkerboard.png

Background pattern

Description automatically generated

Figure Rotated Checkerboard.png

A picture containing outdoor, night, outdoor object, star

Description automatically generated

Figure NoisyCheckerboard.png

A picture containing lit, dark, night

Description automatically generated

Figure IIScMainBuilding.png

A picture containing building

Description automatically generated

Figure Downsampled IIScMainBuilding.png

A picture containing keyboard, dark, night

Description automatically generated

Figure Rotated IIScMainBuilding.png

A picture containing dark, night

Description automatically generated

Figure NoisyIIScMainBuilding.png

The results show that Harris Corner Detection algorithm is not scale invariant.