EE263KL

SAN JOSE STATE UNIVERSITY DEPARTMENT
OF ELECTRICAL ENGINEERING

Summer 2025

HOMEWORK No.1 – Due July 30

Problem 1 (Use Matlab and Python; Attach well-commented source code and the input/output images.)

Print the Lena image in both color and gray.

Problem 2 (Use Matlab and Python; Attach well-commented source code and the input/output images.)
In the Matlab code below, the "edge" command was used to apply convolution using Sobel and Prewitt edge operator.

```
>> I=imread('Lena.png');
>> G=rgb2gray(I);
>> imshow(G)
>> CG=edge(G,'sobel');
>> imshow(CG)
>> CP=edge(G,'prewitt');
>> imshowpair(CG,CP,'montage')
```

Using the "conv2" command as shown below, show the same results as above.

```
>> sx=[-1 0 1; -1 0 1; -1 0 1];
>> xx=conv2(G,sx);
```

Problem 3 (Use Matlab and Python; Attach well-commented source code and the input/output images.)

Using MATLAB and Python, repeat the process of bone scan image enhancement as discussed in class.

Download the bone scan image from the website below (click on Chapter 3 and find Fig.3.46a):
http://www.imageprocessingplace.com/DIP-3E/dip3e_book_images_downloads.htm

Problem 4 (Use Matlab and Python; Attach well-commented source code and the input/output images.)

Repeat Problem 3 for another image attached to this homework, image9.jpg.