

Continuous Evaluation 3(CE3)

The given image is of a circuit board. Such images are used in optical inspection of manufactured PCB boards in factory. The experiment consists of testing the utility of spatial filtering techniques for image restoration. Submit only one file ("yourname.py").

The following steps need to be performed.

Step 1: Add a uniform noise (mean:0, variance:900) to the image. This image is 1(a).

Step 2: Add salt and pepper noise ($P_s=P_p=0.1$) to the image 1(a). This image is 1(b).

Step 3: Filter image 1(b) with a 3x3 arithmetic mean filter. This image is 1(c).

Step 4: Filter image 1(b) with a 3x3 alpha-trimmed mean filter. This image is 1(d). Identify the appropriate value of d for the filter.

Your code should generate a plot containing 4 images and print the appropriate value of d .

Repeat the above steps 1-4 for 5x5 and 7x7 filters. Use a switch case in the code which asks the user to see the results for specific kernel size.

Your code should also print the best kernel size.

You may refer to figure 5.12 of Gonzalez book (4th edition).