EXP- 13 Fuzzy Logic - Image Processing.

Procedure for fuzzy logic edge detection

Step 1 : set up the environment.

1. Open MATLAB : Ensure you have access to MATLAB with the image processing toolbox and fuzzy logic toolbox installed.

Step 2 : Import and convert image to Gray scale

1. Read the RGB image.
2. Convert the Gray scale.

Step 3 : Convert image to double - precision data

1. Convert to double.

Step 4 : Obtain image gradients

1. Define Gradient filters
2. Calculate Gradients
3. Plot image gradients.

Step 5 : Define fuzzy inference system (FIS) for edge detection

1. Create FIS
2. Add inputs
3. Define membership function for inputs.

4. Add outputs
5. Define membership functions for output
6. Plot membership functions.

Step 6: Specify FIS rules

1. Add rules for FIS

Step 7: Evaluate FIS

1. Evaluate edge detection

Step 8: Plot results

1. Plot original grayscale image
2. Plot detected edges

Result:

Thus program was successfully executed and the o/p is verified.