Exp No: 9: 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

1) Read the RGB Image

2) Convert to Grey 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 output

5) Define membership functions to output

6) Plot membership function

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 Gray Scale Image

2) Plot detected edges

Result:

Thus program was successfully executed and O/P is verified