Exp No: 14 FUZZY LOGIC -IMAGE PROCESSING

Date: 06/11/24

AIM:

The aim of implementing fuzzy logic for edge detection is to enhance the robustness and accuracy of edge detection in images by handling uncertainties in pixel intensity transactions.

PROCEDURE:

Step 1: Set up the environment

Step 2: Import and convert image to grayscale

1) Read the RGB Image
2) Convert to Grayscale

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 Interface 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 outputs

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, the Implementation of fuzzy logic is executed successfully and output is verified.