Ex No: 9 Fuzzy Logic - Image Processing

Date:

AIM:

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

Procedure:

Step 1: Set up the environment

1. Open MATLAB: Ensure you have access to MatLab with the image Processing tool box and fuzzy logic tool box installed.

Step 2: Import and convert image to Gray Scale.

1. Read the RGB image
2. Convert to Gray Scale

Step 3: Convert image to double - Precision

1. Convert to double.

Step 4: Obtain Image gradient

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

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steps: Define fuzzy inference system if for edge detection

1. create FIS
2. Add inputs
3. Define membership function for inputs
4. Add output
5. Define membership function for output
6. Plot membership function.

step6: Specify FIS rules

1. Add rules for FIS

step7: Evaluate FIS

1. Evaluate edge detection

step8: Plot results.

1. Plot original Grayscale image
2. Plot detected edges

o/p:

Result:

The Program was Successfully executed and the output is verified.