Exp. no: 9
Date :

FUZZY LOGIC - IMAGE PROCESSING

Aim

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

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 Greyscale

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 gradient

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 function for output
6. Plot membership functions

rules

is

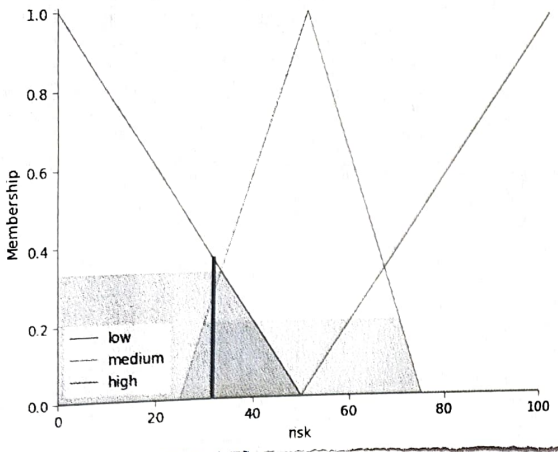
s

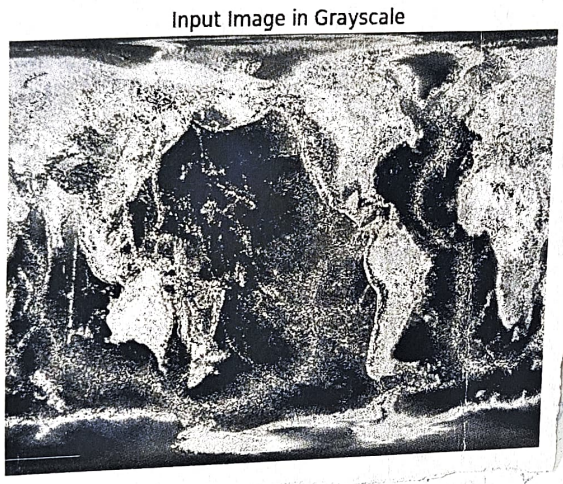
detection

yscale image

lges

```
Calculated risk level: 31.755810251512283
```





Result

Thus fuzzy logic - image processing is executed and implemented successfully.