Object Recognition

Instructor:
Professor Buket Barkana

Submitted By:
Allon Rai
Sangita Ale
Abstract

- Introduction
- Our Project
- Design
- Conclusion
- Demo
Introduction

- Object recognition using GUI
Software and Hardware Requirements

- PC
- Microphone
- Matlab software
Login Page of our Project

Multimedia Project

Password: apple

Login
Project Description

This is a multimedia project that involves both image and voice processing. The main objective of our project is object recognition. The basic idea of our project is that an image is fed into the computer and the computer will tell us what that object is. For example, if it is an apple then it will say “an apple” after processing the image and calculating necessary parameters for image recognition. It involves reading and writing image, reading and playing voice signal, taking threshold of the image, image thinning, segmentation and dilation of the image for image processing.

For this project we have developed a GUI using matlab.

Supervisor

Buket D. Barkana
Assistant Professor of Electrical Engineering
E-Mail: bbarkana@bridgeport.edu
Phone: 203-576-4577
Office: Tech157


Project Member

Allon Rai
student ID: 0792963
University Of Bridgeport
Ms in Electrical Engineering
allonrai@bridgeport.edu

Sangita Ale
Student ID: 0790162
University Of Bridgeport
Ms in Electrical Engineering
SangitaAle@bridgeprot.edu

Object Recognition

Proceed to project
List of Items

List Of objects

1 4 7
2 5 8
3 6 9

Δ

Go To Main Project
GUI Design
GUI Design

Press Number

Enter the number and then press image button

Image Display

Make a Guess

Click To Check Your Answer

Image Recognition
Project Design

Press Number

Image Display

Make a Guess

Click To Check Your Answer

Image Recognition
Project Design
Project Design

Press Number

Image

Make a Guess

Image Display

make a guess and press Click To Check button to know whether you are right or wrong

Click To Check Your Answer

Image Recognition
Project Design

Image Display

Press Number

Make a Guess

Click To Check Your Answer

Image Recognition

click here for image processing and recognizing the image
## Final Result

<table>
<thead>
<tr>
<th>Press Number</th>
<th>Image Display</th>
<th>Image Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td><img src="image.png" alt="Apple Image" /></td>
<td><img src="binary_gradient.png" alt="Binary Gradient Mask" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="dilated_gradient.png" alt="Dilated Gradient Mask" /></td>
</tr>
<tr>
<td>Make a Guess</td>
<td></td>
<td><img src="binary_with_holes.png" alt="Binary Image with Filled Holes" /></td>
</tr>
<tr>
<td>apple</td>
<td></td>
<td><img src="cleared_border.png" alt="Cleared Border Image" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="segmented.png" alt="Segmented Image" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="outlined.png" alt="Outlined Original Image" /></td>
</tr>
</tbody>
</table>

The image display shows a red apple with a green leaf. The processing steps include:
- **Binary Gradient Mask**
- **Dilated Gradient Mask**
- **Binary Image with Filled Holes**
- **Cleared Border Image**
- **Segmented Image**
- **Outlined Original Image**

The bottom area contains a graph with a green and blue line, indicating some form of data analysis or signal processing.
Image Processing

- binary gradient mask
- dilated gradient mask
- binary image with filled holes
- cleared border image
- segmented image
- outlined original image
Conclusion

- Thus we successfully completed our Project that takes image as an input and after processing the image gives out the output as a voice signal.