

SOCIAL ROBOT

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OVERVIEW

We plan to make a social robot which can interact with people using voice recognition and image processing. It can replicate the expressions shown by the person sitting in front of it. It can use Google search engine for searching about a topic and display it through a projector. We can specify commands like record, search, talk.

FEATURES

Different Modes:

1. Talk- It can interact with the user through AI.
2. Search- It can make a wiki search and project it on a surface using a projector.
3. Record- It can make a recording of the surroundings for a specific duration.
4. Emotion Display- It can replicate the expressions of the user.

IMPLEMENTATION

1. Google Speech to Text

We plan to use Google Speech to Text API for converting the users voice input to text.

2. Cleverbot

We plan to use Cleverbot API for interactive chat with the user.

3. OpenCV

We plan to use OpenCV for image processing and detecting facial expressions of the user.

4. Wolfram Alpha Python Interface

This will be used to send and receive data from Wikipedia.

5. Raspberry PI

We will use Raspberry PI for all the processing.

6. Replication o expressions

Using Servo Motors and a 3-D printed Mask, PI cam, .

EXPECTED TIMELINE

1. First 10-12 days
Trying and Learning Inventor.
Designing Mechanical Structure in Inventor.
Learning Python and the libraries that we will be using.
2. Next 10-15 days
Structure assembling.
Writing code for emotion replication.
3. Next 5 days
Coding for other stuff.

4. Next 5 days
Testing and improvement.

HARDWARE

1. Raspberry PI
2. PICam
3. Speaker
4. 6 Servos
5. Projector
6. Servo Socket
7. Face Mask
8. Base frame
9. Body frame.

REFERENCES

<http://blog.oscarliang.net/raspberry-pi-voice-recognition-works-like-siri/>

OpenCV Blog

Cleverbot API

Google Speech to Text API

WORK DISTRIBUTION

Programming Division

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