

The Robot "Nybble" Cat

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Introduction

Nybble is a brand-new type of pet that isn't just a walking robotic cat. It's an advanced robotic kitten with a tiny computer, customized software, can be programmed in our preferred language, and any upgrades you can imagine. We will use a Raspberry Pi. When adding a Raspberry Pi, it is considered as adding a brain to the cat, in addition to the Arduino, which in turn allows the cat to be moved using the servomotor.

The Nybble cat has no ability to recognize the voice in its surrounding. Because the cat is not developed only walks, so we have two problems, the first cat not knowing the sounds and distinguishing them from the voice of the real owner so that he can understand the orders of his owner.

A quick look at each domain and outline how each domain will be involved in the process of constructing this project.

- Robotics

Robotics is a branch of engineering that involves the conception, design, manufacture and operation of robots. The objective of the robotics field is to create intelligent machines that can assist humans in a variety of ways.

- Artificial Intelligence

Artificial intelligence allows machines to model, and even improve upon, the capabilities of the human mind. From the development of self-driving cars to the proliferation of smart assistants like Siri and Alexa, AI is a growing part of everyday life. As a result, many tech companies across various industries are investing in artificially intelligent technologies.

Objectives

Aim and the Objective of Project

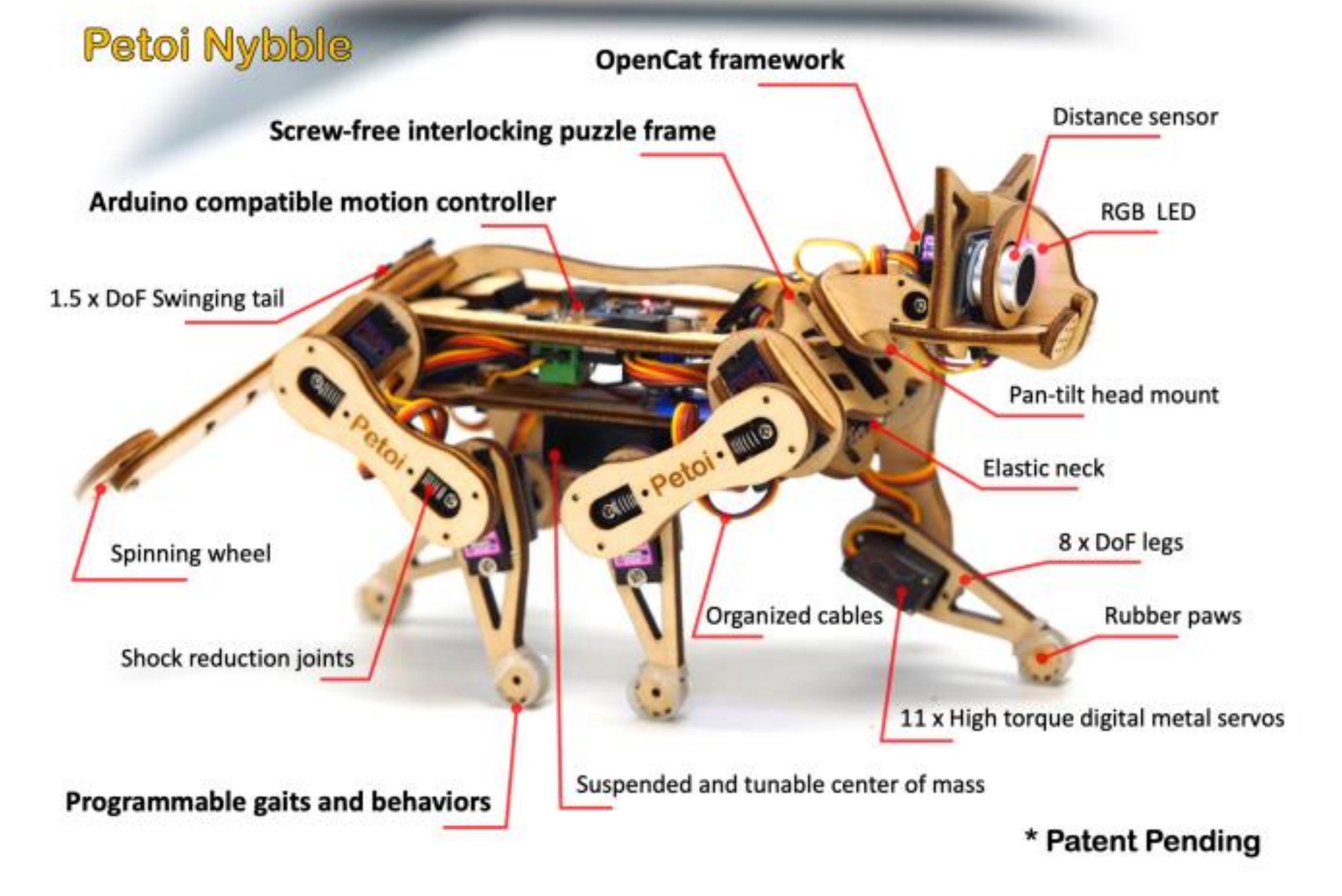
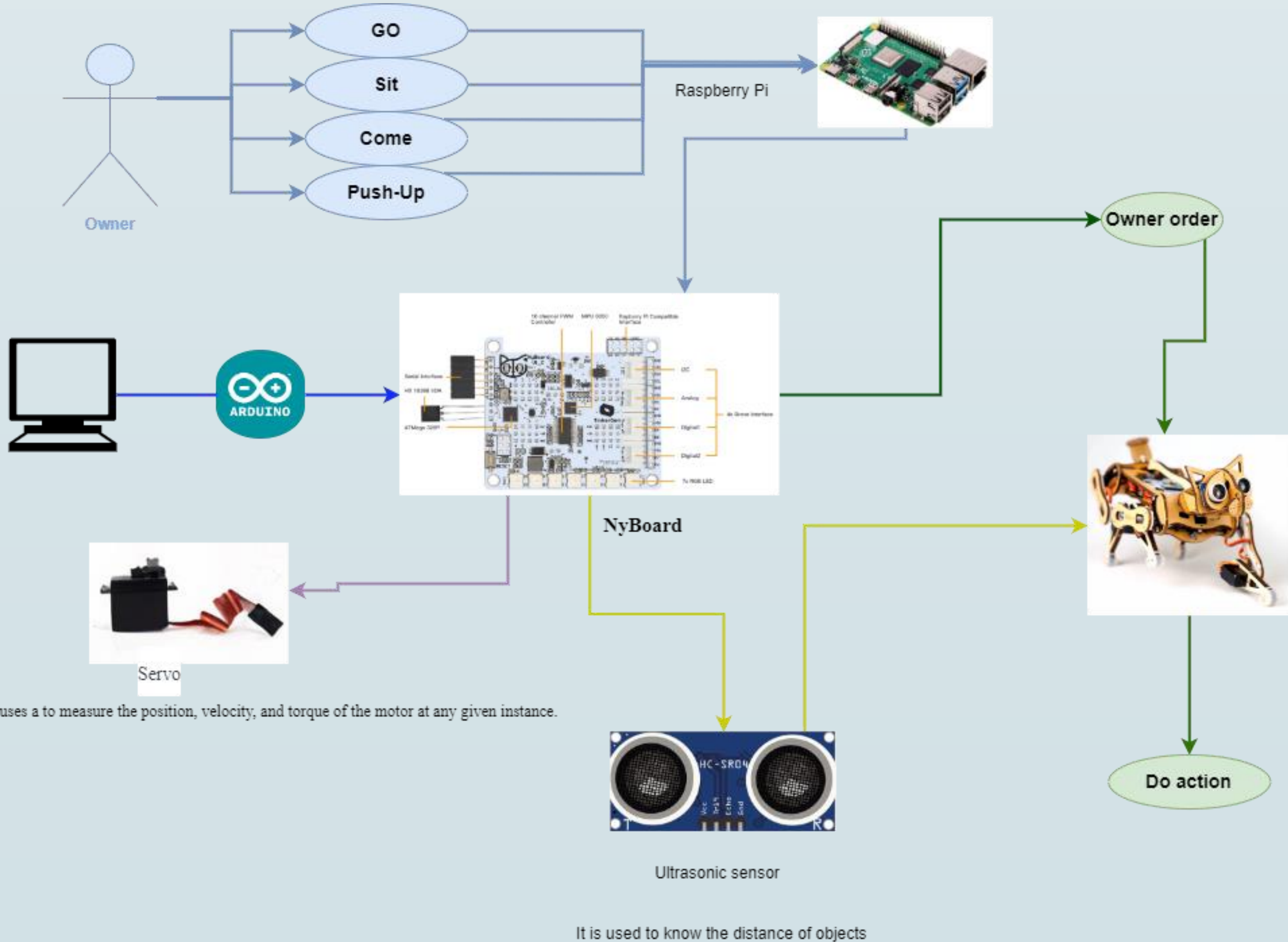
Making a Robotic Cat (Nybble Cat) that behaves like a real cat and obeys the owner's voice to receive commands to do some action like; come, do a push-up, stand up, etc.

Proposed Solution

Voice recognition to do commands - We need a microphone to be connected and defined in the raspberry pi by downloading python on the raspberry pi and downloading the libraries that help recognize voice commands.

Methodology

As we see in the figure, we will program the NyBoard by using Arduino IDE to program the servo motors to sit, walk, etc. If the owner gives the cat commands like; go, sit, push up, etc., the Raspberry Pi will detect the voice and then send it to the Nyboard to obey the commands and do actions. Also, we will program the Ultrasonic sensor to prevent any crash.



Conclusion

In conclusion, we benefited greatly from the work of this project in terms of assembling and programming, and we also learned about Arduino and about Raspberry Pi and how to program them and we have also benefited from the use of artificial intelligence by making our information increase on this topic and linking it to life matters we aspire in the near future to work on developing the cat by making it useful in order to be more than an ordinary cat.

References

1. Nybble Cat - <https://www.peto.com/pages/nybble-cutest-bionic-robotcat>
2. Nybble Cat on github - <https://github.com/PetoCamp/OpenCat>
3. Problem Statement - <https://www.tutorialspoint.com/arduino/arduinotemperature sensor.htm>
4. ProblemStatement – ProposedSolution<https://github.com/AssemblyAI/youtube-tutorials>
5. Whatisrobotics–<https://www.techtarget.com/whatis/definition/robotics>
6. IntroductiontoAI – <https://builtin.com/artificial-intelligence>

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