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Arduino Child Caring Robot

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Abstract: ***Artificial Intelligence (AI) is a rapidly growing field of computer science that focuses on the development of intelligent machines that can perform tasks that typically require human intelligence, such as perception, learning, reasoning, problem-solving, and decision-making. AI involves the study and development of algorithms and computer programs that can simulate human cognitive abilities and can improve their performance over time through machine learning and deep learning.The goal of AI is to create intelligent machines that can think, reason, and learn like humans, and that can perform complex tasks such as natural language processing, image recognition, and decision-making in real-world scenarios. AI has the potential to revolutionize and manufacturing, by improving efficiency, accuracy, and speed in various Processes There are different types of AI, including rule-based AI, which follows a set of predefined rules to make decisions, and machine learning-based AI, which learns from data to improve its performance. Deep learning, a subset of machine learning, uses neural networks to model complex relationships in data and is responsible for many of the recent advances in AI, including image and speech recognition. Despite the many benefits of AI, there are also concerns about its impact on society, including job displacement, bias in decision-making, and the potential misuse of AI for harmful purposes. Therefore, it is important to develop***

Keywords: Artificial Intelligence, Sensor , Child Caring Robot, Ultrasonic Sensor, Supervised Learning, Human-Robo interaction, GPS.

I. INTRODUCTION

The Outcome of the project is Child caring. The Robot can perform different operation like to do our, responding to our commands. This type of Arduino robot not only to do our task It has the ability to detect the sharp object by using Supervised learning, the main concept is to taking care of the children, it can be able to manage a children above (4 to 10) years, it built the child, Human-Robo Interactions It has the ability to detect the sharp object by using Supervised learning, the main concept is to taking care of the children, it can be able to manage a children above (4 to 10) years, it built the child, Human-Robo Interactions. The voice commands are processed in real-time, using an online cloud sever. The speech signal commands are converted into text form are communicated to the robot over a Bluetooth network. The child care robot is developed on a micro-controller based platform and can be aware of its current location. The effectiveness of the voice control communicated over a distance is measured through several experiments. Performance evolution is carried out with encouraging results of the initial experiments.

II. LITERATURE SURVEY

1) Unsupervised Learning for Semantic Segmentation of Urban Scenes" by S. Zheng et al.
This paper proposes an unsupervised learning framework for semantic segmentation of urban scenes. The proposed method is based on clustering and manifold learning techniques and is evaluated on the Cityscapes dataset.
"Unsupervised Learning for Object Tracking in Autonomous Vehicles" by S. Kim et al. This paper proposes an unsupervised learning framework for object tracking in autonomous vehicles. The proposed method is based on a combination of deep autoencoder and clustering techniques and is evaluated on the KITTI dataset. "Unsupervised Learning of Object Detection and Tracking" by L. Leal-Taixé et al. This paper proposes an unsupervised learning framework for object detection and tracking. The proposed method is based on a combination of clustering and tracking-by-detection techniques and is evaluated on the PASCAL VOC dataset.

2) A.Sudhakar Reddy, C. Raju Kumar, Saumya
Virtual assistants using AI are becoming increasingly popular in today's digital age. They are designed to mimic human interaction, enabling users to communicate with them through natural language. Here is a brief literature survey on virtual assistants using AI "Siri: A Virtual Assistant and Personal Concierge" by Adam Cheyer et al. This paper describes the development of Siri, a virtual assistant that uses AI to understand natural language and assist users with tasks such as scheduling, messaging, and searching the web. Google Assistant: A Conversational AI for the Google Ecosystem" by Mihir Joshi et al.

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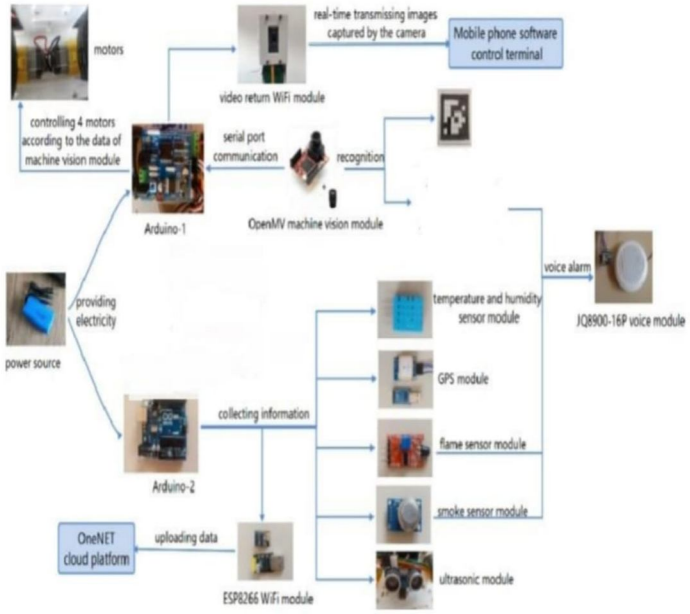
This paper presents the development of Google Assistant, a virtual assistant that uses AI to provide users with personalized assistance across a wide range of tasks and services."Alexa: An Intelligent Personal Assistant for Smart Home Automation" by Chetan Sharma et al. This paper describes the development of Alexa, a virtual assistant that uses AI to interact with users through voice commands and perform tasks such as playing music, controlling smart home devices, and answering questions.

3) Personal child care robot written by S H Hosseini & K M Goher

Personal child care robots are robotic devices designed to provide assistance and support for childcare. These robots can perform a variety of tasks such as monitoring the child's health and well-being, assisting with feeding and bathing, and even providing educational support. The field of personal child care robots is still relatively new, but there has been significant research and development in recent years.One of the key challenges in designing personal child care robots is ensuring that they are safe and reliable. Many researchers have focused on developing systems that can detect and respond to potential dangers, such as falls or choking incidents. Additionally, researchers have explored the use of sensors and cameras to monitor the child's movements and behavior, allowing the robot to respond appropriately to their needs.Another important consideration in the design of personal child care robots is their ability to interact with children. Children can be unpredictable, and robots must be able to adapt to their changing moods and behaviors. Researchers have explored various approaches to developing robots that can engage and interact with children, including the use of expressive gestures and facial expressions.

III. PROPOSED METHOD

1) We created a Zeta typically known as Virtual Assistant like google assistant ,siri, alexa based concept to interact with the child when it is home alone.
2) If any sharp obstaclesaround the child it will kick off it or playing with the knife or else it will send message to the parents
3) The Robot turned on when itself by analyzing the movement of the child and keep monitoring the child.
4) Recently child kidnapping cases are existing in this world to avoid such accidents.
5) If any third person entered home which is not in the database of the robo. It gives the alert message to the neighbour-hood people and the parents.
6) If a child feels lonely it will interacts and develops the Human-robo interaction and obeys the child commands and entertain it. It will connects with parents virtually



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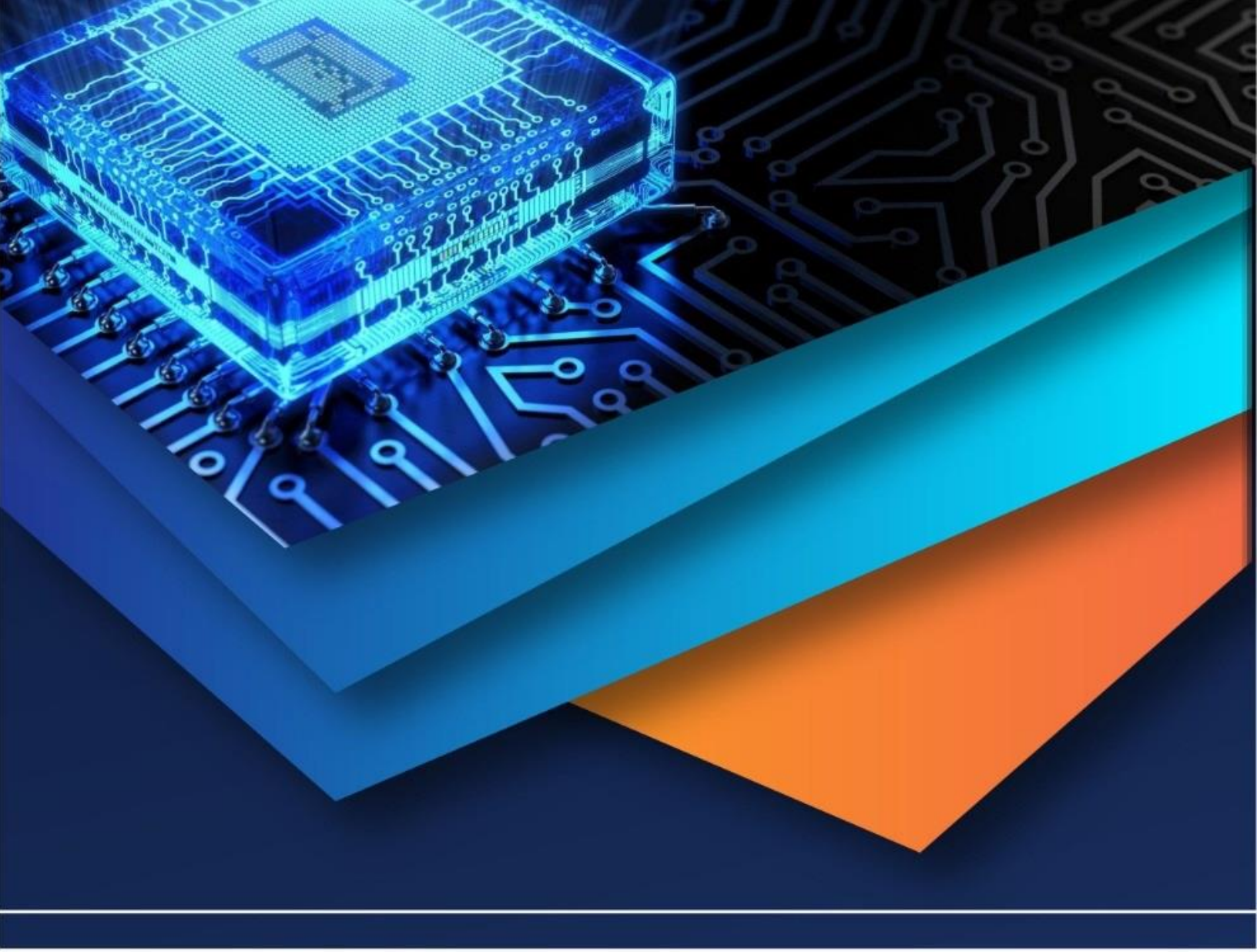
IV. CONCLUSION

The proposed system serves for many purpose, it detects the sharp obstacles around the child and analysing the activities of the child and connect through the parents virtually . It develop the child ,human - robo interaction with the child .This type of robot will help us to reduce our stress less lifestyle. And being helpful in personal , health ,childcare.

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