Carie - The Space Pet

Jena Catherine Bel D[1], Anjana.P[2], Durga.M[3], Naveen.D[4]

[1]Project Guide, Department of Artificial Intelligence and Data Science, Sri Sairam Engineering College, Chennai

[2,3,4]Student, Department of Artificial Intelligence and Data Science, Sri Sairam Engineering College, Chennai

Abstract

Robotics is the fusion of science, engineering, and technology that creates robots, or machines, that mimic or take the place of human beings in performing tasks. Multiple sorts of robotics are possible. It is also possible to use robotics for space research. Physically and mentally challenging situations might arise for humans during space travel. The use of technology can help us to some extent get past the mental challenges as the physical challenges are unavoidable. We employ robotics in order to get over mental obstacles. To reach the objective of promoting astronaut wellness in space, we combine robotics with a number of other technologies. This project is aimed at developing an autonomous robot companion for astronauts during space missions. The objective is to provide real time monitoring, forecasting capability and navigation assistance in order to ensure the safety, efficiency and well-being of astronauts. The robot companion is capable of monitoring astronaut's health conditions and detecting potential problems at an early stage by integrating high resolution sensors and sophisticated algorithms. The robot aims to improve the overall experience and performance of astronauts in space by applying predictive analytical tools and advanced navigation systems.

Keywords: Astronauts, sensor, outer space, navigation

1. INTRODUCTION

Robotics is the intersection of science, engineering and technology that produces machines, called robots, that replicate or substitute for human actions. Robotics can take on a number of forms. A robot may resemble a human, or it may be in the form of a robotic application, such as robotic process automation (RPA), which simulates how humans engage with software to perform repetitive, rules-based tasks. While the field of robotics and exploration of the potential uses and functionality of robots have grown substantially in the 20th century, the idea is certainly not a new one. Today, industrial robots, as well as many other types of robots, are used to perform repetitive tasks. They may take the form of a robotic arm, robotic exoskeleton or traditional humanoid robots. The robotics can be used in space studies as well. The humans when they travel to space can face many difficulties physically and mentally. As the physical difficulties are inevitable, we can overcome the mental difficulties to an extent with the use of technology. In order to overcome the mental difficulties we use the robotics.We integrate several other technologies along with robotics in order to achieve

the goal of providing wellness to the astronauts in space. The main goal of "Carie - The Space Pet" is to navigate, predict and assist the astronauts in space, it also acts as a warning system to detect and avoid technical problems and It acts as a mini doctor to monitor the health conditions of the astronauts also It provides an inbuilt navigation system that make astronaut's life easier, further it continues to be a good support and friend to the astronaut during their stay in the outer space. The main motivation of the project is to provide wellness to the astronauts in space by providing emotional and technical support to them in every possible way. The beneficiary of the project includes the space station to which the bot belongs to, family of the concerned and the astronauts. The extensibility of this project is limitation of our imagination.in final this project acts as a friend to the astronaut throughout their stay in space. This project aims to provide emotional support to the astronauts and bring comfort to their work environment

2. RELATED WORKS

[1] This research seeks to provide clarity on the applications of artificial intelligence, and more specifically, the aerospace applications in their technologies. CIMON, or the Crew Interactive Mobile companion, is a virtual assistant that aids in everyday tasks for the astronauts. This research not only focuses on CIMON, but will also connect with programs that NASA has been working on. There is also artificial intelligence built into the rovers that NASA deploys out to Mars. The rovers themselves have AI to enhance their ability in collecting data about Mars, such as being able to identify and regulate their wellbeing with power. There is also their ability to adjust itself as it traverses the terrain of the red planet. A unit on the rover estimates the degree of tilt to ensure safe traveling along the surface with 3-axis information: vertical, horizontal, and yaw.

[2] This platform is designed to simplify human life and help to cope faster, more conveniently and safer with everyday tasks. The system constantly collects data and analyses user commands to create history files to generate behavioural scenarios using the neural network in the future. The system's primary purpose is to monitor, track, manage, and integrate with people's methods in their homes. . After all, by integrating with voice assistants, you can significantly simplify the process of controlling the house by turning on or off various appliances or systems, setting or configuring multiple means and methods of comfort, such as temperature or underfloor heating. The subject of study is creating, managing, and accumulating data from components and modules connected to smart home and based on them to develop scenarios of system behaviour.

[3] This study aims to investigate the most effective and interesting variables that urge use of the smartwatch (SW) in a medical environment. The Technology Acceptance Model (TAM) is used to detect the determinants affecting the adoption of SW. he collected data were implemented to test the study model and the proposed constructs and hypotheses depending on the Smart PLS Software. The genuine value of this study lies in the fact that it is based on a conceptual framework that emphasizes the close relationship between the TAM constructs of perceived usefulness and perceived ease of use to the construct of content richness, and innovativeness. Finally, this study helps us recognize the embedded motives for using SW in a medical environment, where the main motive is to enhance and facilitate the effective roles of doctors and patients.

[4] Global Positioning System (GPS) is part of satellites orbiting round the universe. It sends the details of their position in space back to earth. GPS has many applications in diverse areas. It is available to any user with a GPS receiver. It has its usefulness in military, weather conditions, vehicle location, farms, mapping and many other areas. This paper reviewed the types of GPS receivers, applications and future.

[5] GPS (Global Positioning System) is a satellite-based navigation system and is used in a variety of applications such as mapping, vehicle navigation and surveying. In this work, a detailed background of GPS is included. First, historical development of GPS technology is provided. This is followed by a detailed theoretical background of GPS and GNSS (Global Navigation Satellite System). Afterwards, the topics of "GPS estimation error" and "increasing GPS position accuracy" are covered. Then, various counterparts of GPS technology, developed by rival countries are discussed. Finally, future expectations of scientific world from the GNSS technology are presented.

[6] As an essential part of artificial intelligence technology, natural language processing is rooted in multiple disciplines such as linguistics, computer science, and mathematics. This paper first introduces the key concepts and main content of natural language processing, and briefly reviews the history and progress of NLP research at home and abroad. Then, the paper summarizes the three stages of machine translation and its research status. In history, the progress curve of natural language processing almost accords with that of machine translation, and the two complement each other. Based on this, the paper analyzes the applications of natural language processing in machine translation, and points out the challenges and trends in the field of natural language processing. Finally, the author discusses the relationship between machine translation and human translation in the age of artificial intelligence, and visualizes the future prospect of machine translation.

[7] Automatic emotion recognition based on facial expression is an interesting research field, which has presented and applied in several areas such as safety, health and in human machine interfaces. With the remarkable success of deep learning, the different types of architectures of this technique are exploited to achieve a better performance. The purpose of this paper is to make a study on recent works on automatic facial emotion recognition FER via deep learning. We underline on these contributions treated, the architecture and the databases used and we present the progress made by comparing the proposed methods and the results obtained. The interest of this paper is to serve and guide researchers by review recent works and providing insights to make improvements to this field.

3.Conclusion

Carie-The space pet uses Inbuilt navigation technology to navigate through outer space. It makes the situations less stressful by being a friend to the astronauts during their entire travel. It also keeps a frequent check on the climatic condition and pattern in outer space. It acts as a mini doctor at times and provides medical assistance to the astronauts. It helps to detect technical problems and solve them at the earliest. The bot can be further implemented and improved by using artificial intelligence and algorithms. It can be implemented in space vehicles for better communication and the mental fitness can be improved during the overall stay of the astronauts in space. Further It can be concluded that carie-The space pet can be used to achieve the goal of providing wellness to the astronauts in the space.

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