"WALKING DOG WITH SENSOR"

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ABSTRACT

Now a days, design, development, and motion planning of a mobile robot explore research areas in the field of robotics. Mobile robots have an extensive area of applications in versions fields like space exploration, military application, industrial use, and many more. Hence, the design and development of a mobile robot is a crucial part of the above application.

Among the entire mobile robot, the walking dog robot is a legged robot, which is superior to wheeled and tracked robot due to its potential to explore in all the terrain like the human and animal.

In this paper, the survey concentrates on various design and development approaches for the Walking dog robot, and environment perception technique are discussed. Besides, spot is one of the most advanced and intelligent walking dog robots. The performance of each walking dog and the future outline are provided in details.

KEYWORDS

Repeatable task, Problem of labor manpower

INTRODUCTION

Over the past 40 years, a variety of engineers and scientist have embraced the opportunity of legged locomotion, building a diverse set of ingenious and inspiring legged robots. For example, see Bern's and (2006), kar (2003) for many explain

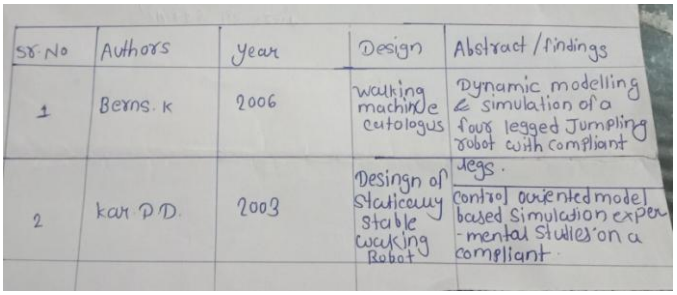
The present authors got started in this area 25 years ago focusing on legged robots that moved dynamically (Raibert, 1986 , 1990). They development a serious of laboratory robots in the 1980's that moved dynamically and balence as they went.

Theses robots include one,two ,and four -legged system that hopped , ran with trotting , pacing and bounding gaits ,climbed simple stairways, jumped over obstacles, set a world land speed record for legged robots of 6m/s (13 mph) , and performed simple gymnastic manoeuvres.

PROBLEM IDENTIFICATION

- In present scenario ,most & bigger problem is, when searching for problem of labor manpower in middle case industries, than we come to know about many other things like production , speed speed of manufacturing and quality of the product are necessary in current scenario.
- The human can't do repeatable task so to accomplish that we use robot of fulfill the task
- Harmful task where human get and also hazardous for them robot arm is an great.

LITERATURE SURVEY



Sr. No	Authors	Year	Design	Abstract / findings
1	Berns. K	2006	walking machine catologus	Dynamic modelling & simulation of a four legged Jumpling robot with compliant legs.
2	kar D.D.	2003	Design of statically stable walking Robot	control oriented model based simulation experimental studies on a compliant

OPERATION OF WORKING

The control system adapts to terrain changes through terrain sensing and posture control. The control system uses joint sensor information to determine when feet are in contact with the ground and to determine the desired load On each legs and actuator . A posture algorithm controls body position by coordinating the kinematics of the legs with their ground reaction forces to produce a desired net behaviour at the body . The posture algorithm implements computed leg compliance on uneven terrain. This approach allowed control of body roll, pitch , and height level terrain sensing .BigDog adapts to the local terrain variations without highest and attitude to conform to the local terrain, and it abjusts footfall placement to compensate for orientation of the robot body and ground plane reletive to gravity. The control system leans the quadricepd forward while walking along the contour line . The control system accommodate inclined steeper then 45 degrees by also abjusting the walking gait pattern and usnig samller steps. Many of these simulated results have been replicated on the physical BigDog robot , except for very steep climbs where traction in the physical world limits performance image for physics-based simulation used to develop walking algorithm.

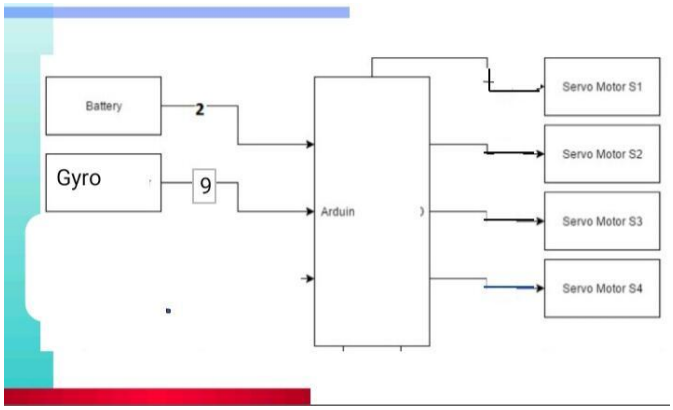
METHODOLOGY

- collected the data through Google scholar, blogspot, and some social website
- We collected the data through data mining technique, which is mainly of two types predicative and descriptive
- Where predicative means predefine the outcome and descriptive means describing and giving a detail of a topic

WHAT IS WALKING DOG WITH SENSOR

Walking Dog, or walking machines , are designed for locomotion on rough terrain and required control of leg actuators to maintain balence sensors to determine foot placement and planning algorithms to determine the direction and speed of movement. The periodic contact of the legs of the robot with the ground is called as walker.

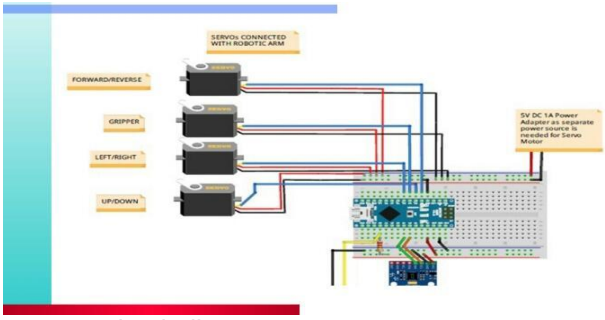
In order to maintain locomotion the center of gravity of the walker must be supported either statically or dynamically.static support is provided by ensuring the center of gravity is within the support pattern formed by legs in contact with the ground dynamic support is provided by keeping the trajectory of the center of gravity located so that it can be repositioned by forces form one or more of it's legs . Stability control is particularly difficult for bipedal systems, which must maintain balence In the forward-backward direction even at rest.some robots , especially toy,slove this problem with large feet ,which provide greater stability while reducing mobility. Alternatively ,more advanced system use sensors such as accelerometer or gyroscope to provide dynamic feedback in a fashion that apporoximates a human being s balance . Such sensor are also employed for motion control and walking. The complexity of these tasks lends itself to machine learning.



Block diagram

APPLICATION

- Industrial robots - These robots bring into Play in an industrialized manufacturing atmosphere.
- Domestic or household robots - which are used at home this sport of robots consists of numerous different gears
- Medical robots: Existing technology are beging combined in new ways to streamline the efficiency of healthcare operation



Circuit diagram

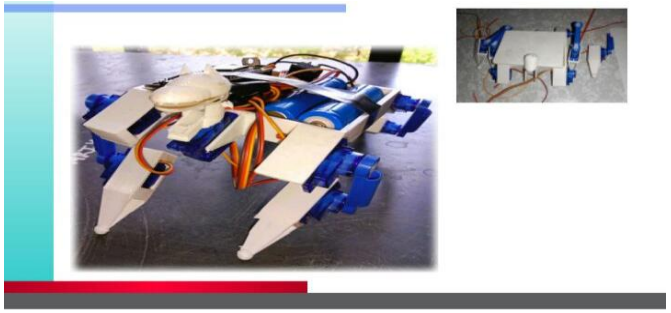
ADVANTAGES

- The advantage of legged locomotion depends on the postures
- The legged robots has more potential to roam almost all earth surface in different terrains
- The quadruped robots are the best choice among all Walking dog related to mobility and stability off locomotion

DISADVANTAGES

The last part of this paper is summarized with the conclusion and the future aspect of the four footed robot.

PHOTOGRAPH OF MODEL



CONCLUSION

- Robotics is fast entering into industrial .space and many other utilities application it is but natural that a lot of employment and entrepreneurship opportunities are opening up for people who wish too enter this growing and exciting filed. It is evident form the above provide details that the robots have proved time and again that Thay can do the impossible .mans short stay in this planet is influenced by These machines created by the human brain. Hopefully in a few year these man every walks of human life.

REFERENCES

www.eeexplore.ieee.org

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RESEARCH PAPER

- How a real dog taught a robot dog to walk
- Walking robots and joint transmission
- Robot with dog type Behavior