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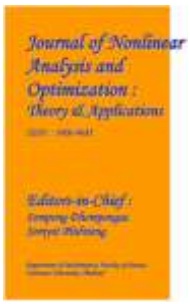

ADVANCED GPS TRACKING SYSTEM FOR PETS

D. SRINIVASULU, ASSISTANT PROFESSOR & HOD,

[2]B. VAMSHI KRISHNA ,[3]D. RAHUL,[4]S.T. FATHIMA,[5]M. NEHA VIDUSHI

[2,3,4&5] UG STUDENTS

DEPARTMENT OF ECE, MNR COLLEGE OF ENGG. & TECHNOLOGY, MNR NAGAR, FASALWADIGUDA, SANGA REDDY-502294

ABSTRACT

The main objective of our project is to provide an optimum solution to the traffic hazards and the road accidents. According to this project when a vehicle meets with an accident, immediately vibration sensor will detect the signal and sends it to Arduino. Arduino sends the alert message through the GSM MODEM including the location to police control room or a rescue team. So the police can immediately trace the location through the GPS MODEM after receiving the information. This system is based on new technology, its main purpose is to detect an accident and alert the nearby hospitals with message over GSM, so the victim can find some help. It can detect accidents the intensity of the accident without any visual contact from control room. If this system is inserted in every vehicle then it is easy to understand how many vehicles are involved in a particular accident and how intense is it. The present board designed has both vehicle tracking and accident alert systems, which make it more valuable and useful. This board alerts us from theft and as well as accident detection. It also detects fire accidents by placing fire detector in one of the interrupt pins.

INTRODUCTION

GPS tracking is the practice of monitoring someone's location remotely by using the Global Positioning System (GPS) to determine their location. A GPS tracker for pet is a device that connects to pet's collar, chain or jacket and uses GPS (Global Positioning System) and other technologies to let user know where user's pet is and follow their every move. A piece of material worn around a pet's neck is called a collar. Same as the jacket or the safety cloth that a pet wear is known as jacket. If user's pet ever runs away, disappears or escapes, this is one of the best ways to find them. Pets such as dogs can run for various kinds of reasons, such as lack of interest, fear, or just a strong hunting desire. The incredibly small cost of a GPS tracker might bring an important return if user's dog misses. These days, our expectations are high for anything and everything that matters to us, such as our children, our loved ones, our cars, and our pets. Pet owners consider their animals to be members of the family, so they have a variety of devices to keep them updated on their activities when they aren't around. Not only does a GPS tracker for dogs and cats allow user's pet more freedom to roam around outside, but it also reduces user's anxiety as the owner. Every year, more and more pets go missing or are stolen in these situations, a GPS may be user's hope for recovery. Collars and wearable technology are becoming more and more popular among pet owners who wish to allow their cats and dogs to roam free. Pet trackers give user peace of mind about user pet's location and can be set to alert you when your pet leaves a specified "safe area," such as user's home. Our pets want to run around and explore the outdoors without any restrictions. Many pet owners want to be able to open the door and let their dog or cat roam the neighborhood without feeling the need to watch over them or try to keep them confined. The geofencing feature with safe zone is included with Tack GPS. By establishing several boundaries, safe zones are created, which helps to maintain order. When the tracking device enters and exits these specified zones, the Tack GPS app will alert user. The primary and important benefit of a pet tracker is being able to find a lost pet. Pet trackers provide location positioning so user can see where user's pet has been going and know where to look for them if

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they have been missing for a long time and users are concerned. A study on lost pets found that thirty-two percent of pets go missing in their lifetime and that 14% of pet owners lose their pets within five years, which point out the need for pet monitoring. Our Internet of Things (IoT)-based automatic pet feeding system raises the bar for pet care in the rapidly changing fields of pet care and technology. Our cutting-edge system provides modern pet owners with a comprehensive solution that goes beyond simple feeding schedules. The customizable feeding schedules and quantity quantities via an easy-to-use interface are among the best features. This system adjusts to your pet's specific demands, whether it is nutritional restrictions, or you wish to change feeding schedules to fit your daily schedule. Additionally, it offers a great solution for pet owners who could spend a lot of time away from home, guaranteeing that their animal friends never go without food or have erratic feeding schedules. However, our dedication to your pet's health goes beyond meal planning and timing. We are aware that preserving food quality is critical to the well-being of your pet. When food is fed traditionally and left out in the open, it can spoil. With its sophisticated sensors, our automatic pet feeder guarantees that food stays clean and fresh. It accomplishes this by quickly clearing the distributing plate of any leftover food at prearranged intervals. This not only ensures that your pet is receiving the best possible nutrition, but it also encourages better eating practices and lowers the possibility of health problems due to tainted or stale food. Another noteworthy benefit of our IoT-based technology is real-time monitoring. We encourage appropriate pet care by giving pet owners the chance to monitor their pets' consumption trends. This function helps create a regular meal plan that meets your pet's nutritional demands in addition to protecting against overfeeding. You might think of it as having a virtual pet nutritionist who makes sure your pet's health and welfare are top priorities. Our state-of-the-art IoT-based pet feeding system represents the love and care that pets deserve in this day and age when they are treasured parts of our homes. It strengthens the link between a pet and its owner by transforming pet care from a chore to an art. With the ease of remote control, the guarantee of food quality, and the capacity to keep an eye on your pet's nutrition in real-time, this system is proof of our dedication to our furry friends' wellbeing and providing them with the best care possible in our busy, connected world

EXISTING SYSTEM Here is the provided literature survey on the existing tracking system: Some design or system of tracking system some uses GPS module to get location of the lost pet. Some new versions of the GPS detection system use Wi-fi module**.**

- O. Santos Baquero, L. A. Akamine, M. Amaku, and F. Ferreira have presented a paper, in this paper entitled “Defining priorities for dog population management through mathematical modeling”, the efficiency of GPS trackers in locating lost pets was investigated in this study [1]. The researchers discovered that GPS tracking boosted the recovery rate of lost dogs significantly, with 82% of tracked dogs successfully recovered within 24 hours.

- An advanced GPS tracking and food dispenser system for pets typically integrates several key technologies to ensure the safety, health, and well-being of pets when their owners are not around. The GPS tracking component uses satellite-based navigation systems to provide real-time location updates, allowing owners to monitor their pet's movements via a smartphone app or a web interface. These systems often include geofencing features, enabling users to set virtual boundaries for their pets, with alerts sent if the animal strays outside the designated area. Many GPS trackers are also equipped with activity monitoring functions, tracking metrics like steps taken, sleep patterns, and overall physical activity to ensure the pet is getting enough exercise. The food dispenser part of the system automates feeding schedules, dispensing pre-set portions of food at designated times. This can be controlled manually through an app or programmed to operate on a fixed schedule. Some advanced models even come with features like portion control, food level monitoring, and the ability to dispense different types of food based on the pet's dietary needs. Certain dispensers may also include cameras, allowing owners to visually

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check in on their pets during feeding time. These systems are designed to provide peace of mind to pet owners, ensuring their pets are well-fed and safe even when they are not at home.

PROPOSED SYSTEM

This paper introduces our innovative design aimed at ensuring the safety of the pet by tracking the real time location and prevent them from getting into trouble. Our proposed system utilizes a GPS module to continuously monitor pet location and a WIFI module is required to share location and pulse rate to the user phone And As Per Time The Food Will Be Distributed data. The proposed advanced GPS tracking and food dispenser system for pets integrates real-time location monitoring, health tracking, and automated feeding into a unified platform. Using a mobile app, pet owners can track their pet's location with GPS, set geofences, and monitor activity. The smart food dispenser allows for scheduled, portion-controlled feedings, with alerts for low food levels and the option to adjust meal sizes based on the pet's activity. Additional features include two-way audio, video streaming, and backup power for continuous operation, providing a convenient and secure solution for pet care.

The advanced GPS tracking and food dispenser system offers pet owners a seamless way to monitor and care for their pets. GPS tracking with geofencing ensures pets' safety by alerting owners when they leave designated areas, while health data like activity levels can be tracked. The automated food dispenser provides portion-controlled meals on a schedule, with remote control via a mobile app. Additional features like two-way audio and backup power enhance convenience, making it easy to ensure pets are fed and secure

LITERATURE REVIEW

O. Santos Baquero, L. A. Akamine, M. Amaku, and F. Ferreira, "Defining priorities for dog population management through mathematical modeling," Preventive Veterinary Medicine, vol. 123, pp. 121–127, Jan. 2016, doi: 10.1016/j.prevetmed.2015.11.009.

We simulated dog population dynamics for a thirty-years period using a logistic growth model. Through sensitivity analyses, we determined the influence of the parameters used in the model. Carrying capacity was the most influential parameter in all simulations. In the owned-dog population, the influence of immigration, abandonment and births was 19%, 16% and 6% of the influence of the carrying capacity, respectively. In the sterilized owned-dog population, the influence of abandonment, female and male sterilization was 37%, 30% and 27% of the influence of the carrying capacity. In the stray population, the influence of abandonment, carrying capacity of the owned-dog population and adoption was 10%, 9% and 6% of the influence of the carrying capacity. In the sterilized stray population, the influence of births, female sterilization and male sterilization was 45%, 15% and 13% of the influence of the carrying capacity. Other parameters had lower influence values. Modification of the carrying capacity requires different interventions for the owned- and stray-dog populations. Dog trade control is a way to reduce immigration. The evaluation of sterilization effects must focus on the variations in the infertile population fraction. Adoption may improve the effects of the reduction in carrying capacity on the stray-dog population. Canine population management aims to modify the determinants of population dynamics (reduction of unwanted births and abandonment, increase in prophylactic treatment coverage and immigration control) to promote the health and well-being of both dogs and people (Garcia et al., 2012). However, these determinants interact in a complex way, and modifications of a given determinant may be intensified, reduced or canceled by changes in other determinants. Additionally, a given objective (for example, reduction in the population of stray dogs) is usually favored by the modification of more than one determinant, and resource limitations may prevent interventions with ideal scope and magnitude. Therefore, there is a need to prioritize the modification of the most influential determinants

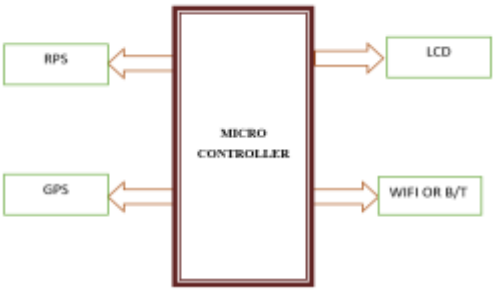
K. E. Rodriguez, N. A. Guérin, R. L. Gabriels, J. A. Serpell, P. J. Schreiner, and M. E. O'Haire, "The State of Assessment in Human-Animal Interaction Research," Human-animal interaction bulletin, Dec. 2018, doi: 10.1079/hai.2018.0022.

Adaptive or therapeutic riding (A/TR) is a recreational activity which provides mounted and ground-based horsemanship opportunities adapted to the abilities of the participants. A/TR provides physical and psychological benefits to participants with diverse disabilities, including physical, developmental, cognitive, and age-related disabilities, promoting higher quality of life. A/TR professionals may be limited in their capacity to implement outcome assessments and report the benefits of their community-based A/TR services to a broad audience. The purpose of this study was to identify whether and how A/TR professionals currently measure participant outcomes; benefits and barriers to implementing standardized assessments in A/TR; and characteristics which would make assessments useful in the community-based A/TR environment. To address this purpose, we conducted a survey among A/TR professionals. We found that while A/TR professionals measure outcomes among their participants, they typically do not use standardized assessments. Survey respondents believed benefits of implementing standardized assessments included bolstering the A/TR profession, acquiring funding, and communicating about A/TR services to a broad audience. Respondents also identified several barriers to implementing standardized assessments including time, systemic, and expertise constraints.

S. J. Ward, S. Sherwen, and F. E. Clark, "Advances in Applied Zoo Animal Welfare Science," Journal of Applied Animal Welfare Science, vol. 21, no. sup1, pp. 23–33, Aug. 2018, doi: 10.1080/10888705.2018.1513842.

For many years, the study of animals and of humans were considered as two different realms with each having little to no relevance to the other. Theories and standardised methods from the natural sciences were objectively applied to all animal species to solve problems. However, just like humans, individual animals may respond differently to different situations or stressors. Looking at all animals through a 'one size fits all' lens was recognised as ineffective and the importance of observing animals directly, using welfare indicators and implementing policies to safeguard their welfare evolved. Animal welfare science began by exploring the needs of farm and pet animals and slowly expanded to include wild animals, both in captivity and the wild. Animal welfare is now recognised as a multifaceted concept. It acknowledges animals need to express their natural behaviours and it encompasses an animal's physical and psychological well-being.

IMPLEMENTATION



CONCLUSION

The proposed system is advance real-time GPS tracking system designed for pets which also senses the pulse of pet with a click from user's connected smart phone. It continuously monitors the pet's location using a GPS module installed in it. Whenever the pet crosses the safe zone (geo fencing) which is already set, the owner receives the notification. Upon the request or when the pet leaves the safe zone the location and the heart rate can be monitored in the registered or connected devices. this project presents a promising solution for pet safety and well-being, offering real-time location tracking, pulse rate monitoring, and potential for further development in animal health monitoring. This proposed system will revolutionize the way of tracking our pets or monitoring them. It will be proven very useful in context of monitoring their movement . It can be conclude that this system is specially designed to track location of pet animals reather than non-living things. This system has also included pulse sensor as a primary component to determine aminal health which was not previously used. **REFERENCES**

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