



Animal Irritating Frequency Identity and Generate to Avoid Accident

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DOI: 10.5281/zenodo.7162310

ABSTRACT

Each day, everywhere, it's far heard about various coincidence of domestic and wild animal like buffalo, cow and nilgai and so forth. Keeping off such accidents are the social troubles. So a machine is necessary which may be affixed to avoid the opportunities of accidents. The paper right here, keep away from the animal to return on avenue/rails and in affect avoid the dying due to accidents. It is largely alarms automobile driver in a sign shape. Simple concept in the back of the paper is to generate the sound sign which may be inaudible to human and stressful for animals. Such tool may be set up on pole close by the road/rails having animal traffic which may be towards jungle/domestic.

1. INTRODUCTION

Every animal is having a selected variety of hearing frequencies. Stressful frequency generator of a specific loudness is designed in addition with some sensible operations to feel the visitors of animals. This system which can come across the animal and warn them at their audible frequency spectrum. Fundamental idea is each animal have experience of unknown risk. Animal can pay attention at precise frequencies. In proposed system we tried to find such frequencies and used it to keep away from collision or accident.. similarly it is heard approximately the various injuries of home animals like buffalo, cow and nilgai etc. keeping off such injuries are the social troubles. essentially on precise spots the accidents happens. So, a machine is necessary which can be fixed to avoid the opportunities of accidents.

2. LITERATURE REVIEW

Machine proposed right here is to avoid the animals to come on street/rails and in affect keep away from the dying because of accidents. To reduce the incidences of untamed animal-automobile collision along the nation direction, [1] proposed the gadget. Wild animal-vehicle collisions commonly occur extra at night, on dry avenue conditions and by means of larger motors .So The capability to avoid a collision is decreased in these kind of conditions because of decreased visibility and accelerated stopping distances [2]. in accordance flora and fauna protection Society of India [3] usually stated animals killed in avenue and educate injuries in India as comply with:
 desk 1: Animals killed in street accidents in India

Table 1: Animals killed in Road Accidents in India

Animals killed in Road Accidents in India(in 6 months)		
Sr. No.	Animal Name	Killed Nos.
1	Spotted Deer	2
2	Hyena	1
3	Leopard	20
4	Leopard cat	1
5	Rusty spotted cat	1
6	Sambar	3
7	Tiger	2

Table 2: Animals Killed in Train Accidents in India

Animals killed in Train Accidents in India		
Sr. No.	Animal Name	Killed nos.
1	Bison	4
2	Nilgai	3
3	Crocodile	1
4	Deer	1
5	Elephant	13
6	Leopard	4
7	Vultures	55



As a initial step toward growing an information of hearing capabilities of deer, auditory brainstem response checks were carried out on captive deer at the university of Georgia’s Whitehall Captive Deer studies Facility [4].

The perfect court have banned automobiles in forests for the animal safety [5]. involved through high animal mortality in traffic accidents on roads passing through thick forests, the ideally suited courtroom on issued notices to the Centre and 10 states asking why mitigating measures, which include a dusk-to-dawn ban on motors on wooded area roads, be not taken right now. In any other case Railways, surroundings ministry differ on slowing trains in tiger place[6]. After a tiger died on being run over by using a passenger teach on the Gondia-Chandrapur track on April14, again one incident took place Lion cub run over through teach in Gujarat[8]. A lion cub died became killed after being hit with the aid of a items teach in Gujarat's Amreli district on 12 might also 2014.

Collisions with animals could have many poor effects:

- Injury to, or death of, vehicle occupants
- Loss of valuable livestock or pets
- Harm to endangered species
- Vehicle damage
- Economic losses (cleanup, repairs to vehicles, etc.)
- Decrease in enjoyment of a tourist holiday due to frequent road kill encounters.

Each animal has his own audible range of frequency spectrum and not all kind of animals found everywhere. However we observed this fact with keen interest and proposed the system which can detect the animal and warn them at their audible spectrum. The behavioral response of specific animals to hearing may depend on the type of sound emitted. Pure tones are single frequency, continuous sounds at equal intensity. Complex sounds resemble sounds occurring in nature (i.e., deer vocalizations) [4] and are composed of two or more pure tones of different frequencies that are generated simultaneously and repeated over time. We proposed the system for identification of traffic on road and according to it the animals hearing signals are generated for their irritation due to which the animal run away out of road site. Two camera are use to analyze the road traffic. If traffic is there on road the system horns the ultrasonic signals for the specific animals so that frequent accident can be avoided. Camera scanning and object recognition using ARM 7, signal generators and power amplifiers for driving the Twitter Horns with specific loudness are used in this work. We surveyed the various hearing frequencies for various animals and particular animal are decided like dogs, cats, bullocks/cows and horses.



Fig. 1: Higher density region of moose in Forest

3. METHODOLOGY AND EXPERIMENTATION

3.1 Hearing Ranges of Animals

The following table 3 shows the minimal and most listening to frequency stages of the unique species. Any try to assess the consequences of sounds on animals have to remember species differences in hearing skills. although the hearing tiers of maximum species overlap to a huge degree, sizeable variation takes place in high- and occasional-frequency listening to as well as in absolute sensitivity. As a end result, a legitimate this is without problems audible to one species can be much less audible, or maybe inaudible, to some other.

Table 3: Hearing Frequency ranges of different animals

Species	Approximate Range (Hz)
Dog	67-45,000
Cat	45-64,000
Cow	23-35,000
Horse	55-33,500
Sheep	100-30,000
Rabbit	360-42,000
Guinea pig	54-50,000
Hedgehog	250-45,000



Raccoon	100-40,000
Ferret	16-44,000
Opossum	500-64,000
Chinchilla	90-22,800
Elephant	16-12,000
Tiger	20-65000

3.2 COMMUNICATION BETWEEN ANIMAL SPECIES

For the reason that animals use their acoustic and vibration senses each to screen their surroundings and to communicate with different animals of the identical species, we must assume that natural selection has optimized these sensing and sound manufacturing capabilities. One specific apparent optimization is to maximize the range over which they can talk with others of the identical species [9]. simple statement suggests that small animals generally use excessive frequencies for verbal exchange while massive animals use low frequencies [10-14].

The most effective assumption is that the frequency is decided simply via the physical houses of the sound-generating mechanism. For a category of animals differing best in size, the vibration frequency of the sound-generating organ depends upon the linear dimensions of the vibrating shape, that are all proportional to the linear size L of the animal, and upon the density ρ and elastic modulus E of the fabric from which it is made [9-11]. Elephants constitute an interesting severe animal within the international because of their very huge mass as an awful lot as 10 tones. Their calls, which have a fundamental inside the variety 14–35Hz, can have an acoustic energy as massive as 5W, leading to a detection distance as big as 5 km, or even up to 10 km after sunset on a clear night time [9,12].

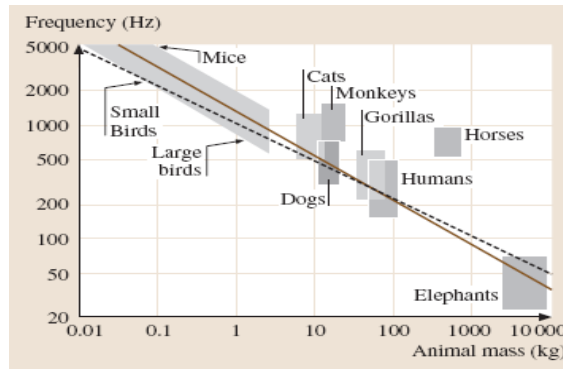


Fig. 2: Relation between animal mass and hearing frequency range

some existing gadget have animal detection and driving force alert message gadget. a few are the use of sensor based photo processing and alert device. together with street Animal Detection [RAD], the use of RADS [15], animals are detected coming into the roadway which automatically triggers the warning device. Drivers are thereby alerted to the presence of animals at the roadway and can react earlier to avoid a ability coincidence. This device is utilized in USA and Canada now an afternoon. The machine is important in those nations because of some reasons like those developed countries the transportation the lengthy street, highway, bridges, railway traces is constructed. this is made by using reducing the forest so due to that the without delay impact on wild life so that the machine is developed to store the wild existence from the coincidence hung on road, railway crossing. The gadget is utilized in US is based totally at the virtual photo processing by using Embedded machine. on this system there's one digital camera with embedded kit, the digital camera capture the animal image that's on the road and deliver mild sign to the automobile driving force. The actual view of the system used in US. of the united states and Canada is proven in Fig.3 and Fig. 4.



Fig. 3: The system arrangement on pole used on highway



Various steps of proposed method:

- 1 The system is based totally on the PIR sensor the use of ARM7 and audio frequency generator to run away the animal.
- 2 The machine used PIR sensor hit upon the visitors motion which are touring alongside the street.
- 3 at the same time, the movement is spotting via the processor and it gives the ultrasonic indicators to the audio amplifier.
- 4 Audio amplifier amplifies the frequency which is anxious to the animal people who come close to the road.
- 5 due to the audio signal, the animal ran far away from the street and consequently there are minimum possibilities of injuries.

3.3 Basic Idea

Simple idea in the back of the machine is to generate the sound signals as a way to be inaudible to human and hectic for animals. Such instruments can be mounted on pole nearby the roads/rails having animal traffic may be toward jungles. each animal or group of animals have a particular range of listening to sound frequencies. There irritating frequency may be estimated by precise logic and can be adjusted by means of trial and errors technique. annoying frequency generator of a specific loudness is designed further with some clever operations to feel the traffic of animal. wise and energy efficient gadget is evolved with a design of animal sensing device along with the system. Such animal sensing and alert device will be mounted on each aspect of roads. it will stay un-operative/perfect until any animal detected to go the street.

4. BASIC BLOCK DIAGRAM

The proposed machine, the input cause signal and gadget reference signal displaying the magnificence of site visitors, the item is detected by using sensing gadget. The frequency spectrum can generator numerous spectrum of frequency, because the enter signal frequency detected, the described frequency sign for the unique animal is generated. The precise multiply hearing frequency signal for animal are generated in the described a couple of frequency spectrums. The hearing frequency sign is amplified with strength amplifier and is give to the horn buzzer. The animal is alert with this signal and he can run far away from that locations. in this machine, the microcontroller ARM7 are used to interfacing the input to the machine analyzed the unique traffic.

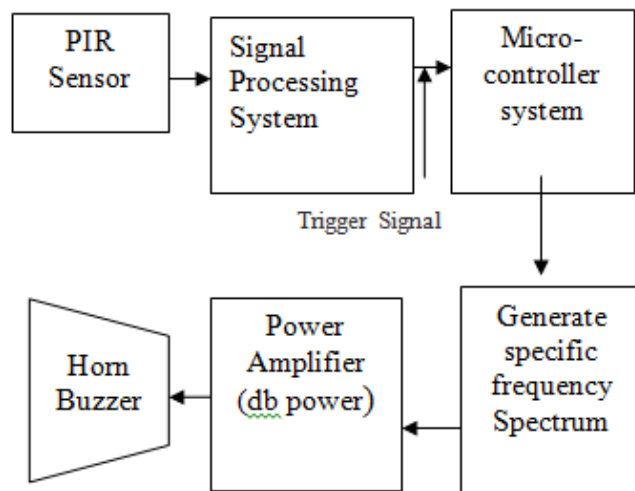


Fig. 4: Basic block diagram

4.1 General Elements

Following are some specification of our system.

- Sensor to detect movement
- Speaker to produce voice
- electricity Amplifier to amplify the sign
- Frequency Generator Circuit

5. CONCLUSION

The experimental consequences are acquired for particular animal and it becomes efficaciously examined. it's also new studies place in social elements for wild animal dying avoidance and accidents prevention. Animal unique frequency spectrum signal are generated. The precise animal ought to be alert or alarm with sign of hazard and he's run far from that area like avenue, railway track and so forth and it result to keep away from the accident.



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