



Pet Diagnostic Health Harness

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Abstract

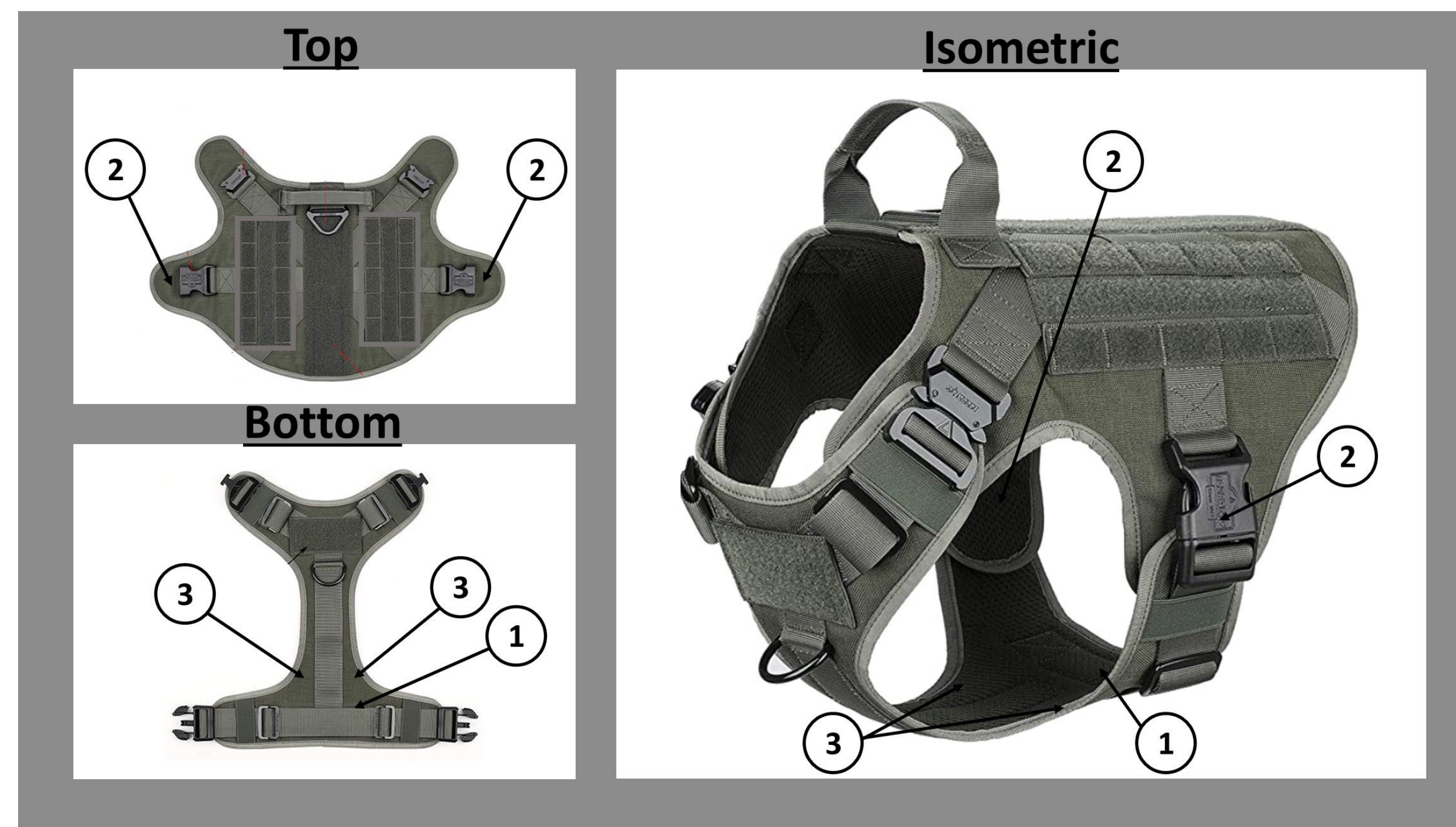
The objective of this project is to design a product with the capability of gathering health diagnostics from a pet and relaying that information to its owners. The goal is to use a harness equipped with sensors that can analyze the animal's heart rate, breathing rate, and temperature. Just as humans' wearable technology impacts early diagnosis for medical issues and awareness of general health today, this technology in theory will be able to do the same and lead to a longer lifespan in most pets; this will also in turn have a positive impact on pet owners' mental health.

Methods


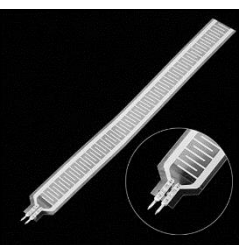
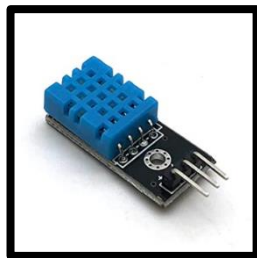
- Program Arduino to take input from heartbeat sensor and record it.
- Program Arduino to record the amount of times the pressure sensors experience large fluctuations in pressure to predict breathing.
- Program Arduino to record temperature data output from the temperature sensors .
- Compare data from the three sensors to average vitals of the respective breed and size of pet.

Solution

- Since the most common pets, dogs and cats, have less locations to gather data and a standard collar could not gather the data from the neck region, a harness must be fitted with sensors in appropriate locations to do so.



Electrical Components:

- ① Heartbeat Pulse Sensor 
- ② Pressure Sensor 
- ③ Temperature Sensor 

Latest Results

- The Heartbeat and Temperature Sensors were programmed in conjunction with the Arduino and placed on the vest to test their ability to gather values from my dog.
- The temperature sensors work as expected, with the heartbeat sensor however, the sensors have a hard time reading through the fur, so different methods would be investigated in the future.
- As for the pressure sensors, getting the pressure sensors to count breaths is difficult as the pressure isn't the same with each breathe so more work is needed with these sensors.

Societal Impact

- *Value Created:* The harness can provide pet owners with data that can help them track their pet's health easing the stress owners have of not knowing their animal's well being.
- It can provide data that may alert the owner to a health condition the pet does not physically show, the negative is it may worry owners when the data is off even though there is nothing wrong with the pet.



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