

ODTUG Geekathon 2017 Project

Team name: DBAkevlar

Basic premise for entry: Separation from a beloved pet, due to work or while traveling can be difficult. While separation anxiety is recognized in pets, it can also be something the pet owner goes through when away from their beloved pet. This geekathon project aims to solve some of this by utilizing the ODTUG KSCOPE beacon and a few inexpensive components and code to help!

Track your pets movements inside your home, learn their routines and even their obsessive behaviors, (even though you may have tried to break!) When they come into proximity of the Pet station, be notified and interact with them- video and sound via your mobile device! No longer will you have to go to Pet stores to get your pet fix while on the road. Get the real thing and have puppy dates even while on the road with your very own pet station.

Main Hardware:

- TurnoutNow beacon
- Pet collar
- Raspberry Pi
- Bluetooth USB module
- Pi Camera
- USB speaker
- misc. RPI accessories
- IOS phone

Main Code: Shell, Python, Node.js, libraries

Project goal:

1. Interaction with pet when pet enters "Pet Station" proximity.
2. Tracking pet's movements when the pet owner isn't home, offering insight.

With beacon attached to pet collar, code will track pet while in house. The Raspberry Pi "station" will be attached to a location central to the pet's daily interaction, (i.e. sliding glass door, favorite front window or door.) With the camera and speaker at pet level. When the pet comes into close vicinity with the Pet station, a notification will be sent to the Pet Owner's mobile device, letting them know that the pet is within interaction distance. The Pet owner can then interact with the pet on their IOS mobile device, seeing them on the camera and speaking to them via their mobile device.

As all tracking data is available, a map tracking the pets daily routine could be produced to show how the pet moves throughout the day. The owner could see if there are certain patterns that show distress due to obsessive behavior, negative or

destructive behavior. This could assist with training and addressing pet's needs when left alone.

Disclaimer: Maker is not responsible for any idiot who decides to update code and use “corrective collars” and motion detectors to address negative behavior in pets. Maker is not responsible if your cat gets ticked off at you for stalking them and takes it out on your good linen while you’re away.

Actual Project Build

The Pet Discoverer

Coder: Kellyn Pot’Vin- Gorman

Team Members: Kellyn, Sam and Joshua

Video: <https://www.youtube.com/watch?v=CBGpBIOeUL8>

Code: <https://github.com/Dbakevlar/Geekathon2017>

Components required:

ODTUG iBeacon, two beacons total.

Raspberry Pi 3, two total

Pi Camera, two total

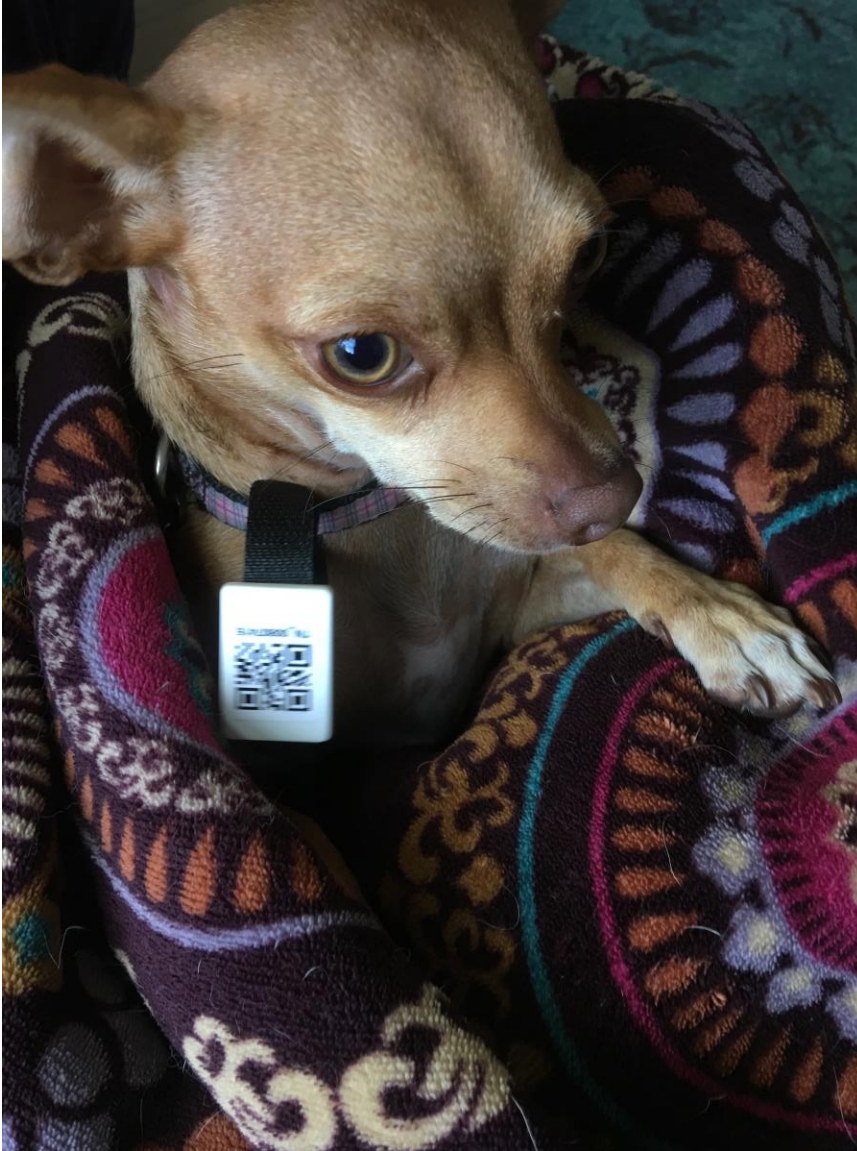
Speaker

Bluetooth USB module

Code and website for interaction

Octocam shell to use for secondary RPI station with camera

Velcro to attach beacon to pet collar



Code Installs:

Jessie OS, (two total)
PiCamera installation, (two total)
BlueZ
Node.js and Python 2.7 used

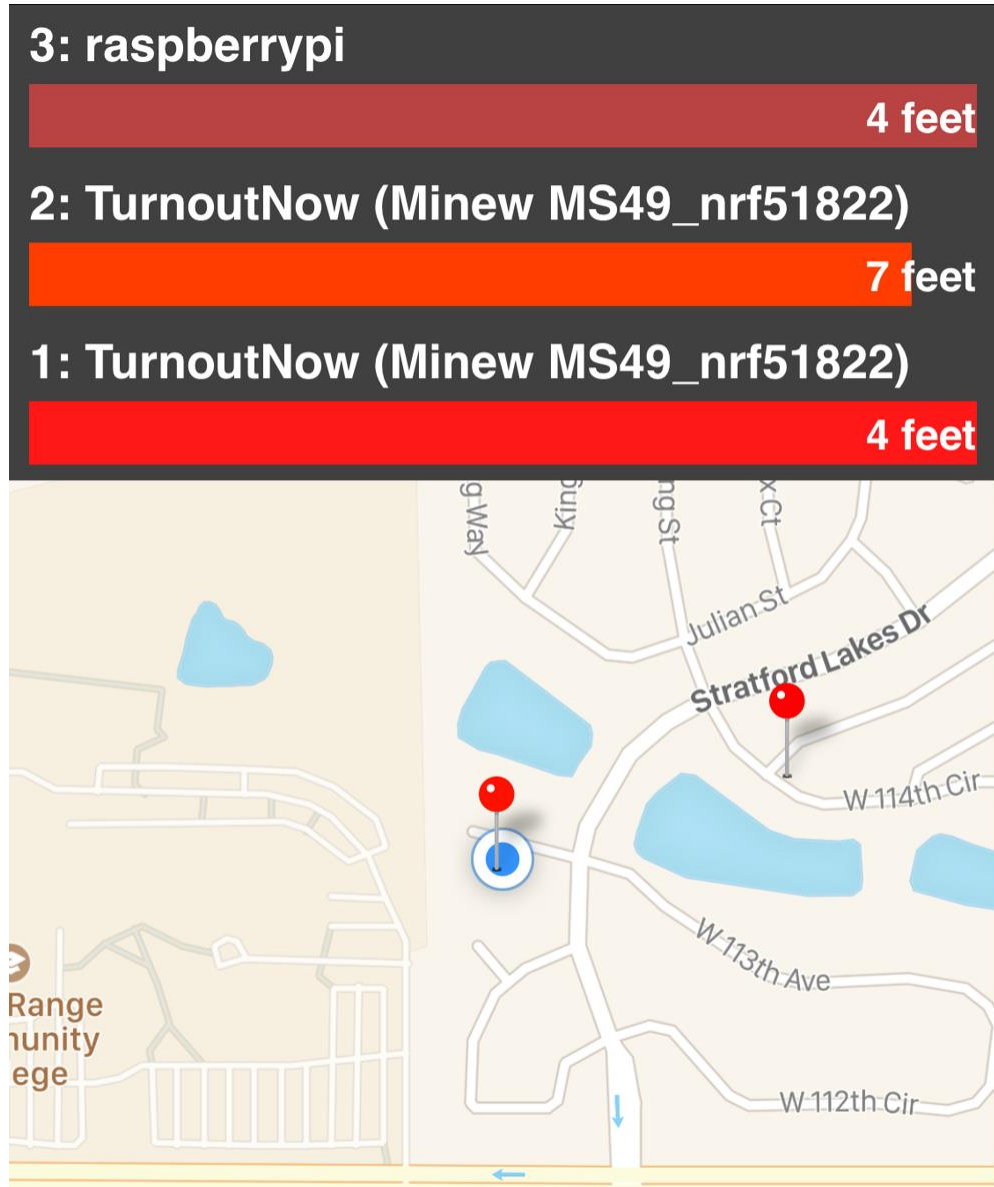
Two TurnoutNow ibeacons

TN_00807415 and TN_004609919

Files Uploaded to GitHub:

Blescan.py
Gps_data.py
Gps_read.py
Node_scan zipped

Main_pet.py



1. is Esme's beacon, *415
2. is DaVinci's beacon *919
3. is Raspberry Pi secondary camera unit

Code Sequence:

1. If GPS on check three times, (sleep between) detects beacon within 10ft. of station, email is sent with initial video and gps location map, (uses node-scan)
2. User is able to use IOS device, (With Blue Hound) to send audio message to pet.
3. Second video, (after 10 second sleep) is then sent via email to owner to show status of pet.
4. If pet then moves out of vicinity, program goes back into sleep until next time they are in vicinity after three verified checks.

Future enhancements-

1. Would like to add map and GPS orientation of main floor of house. At this time, didn't have enough time to create and build out.
2. Have added naming alias for beacons in app vs. having to look at details to tell who is who when multiple beacons are present.