

# **Practicum Ideas**

## **Idea #1 “Mini Turret Gun”**

Mini Turret Gun is a small, stationary gun that fires non harmful objects along the lines of Nerf darts, glitter, or confetti. It rotates horizontally with use of a motor, under the application of a signal from a control device. When a command signal to fire is given, the gun will shoot its pre armed ammunition. The firing mechanism was not completely fleshed out due to quick realization of the difficulty of implementing the device, with potential options being a railgun, coilgun, and compressed air gun, with appropriate modifications to the ammunition made accordingly. It's intended application is merely for entertainment purposes.

## **Idea #2 “Counter Measures”**

Counter-Measures is a selective pet area-denial device intended for use by pet owners. Its intended application is keeping cats off of kitchen counters. An RFID scanner detects the presence of subdermal RFID tags in a pet's neck (the “chip” commonly implanted by a veterinarian). A controller then compares this ID value to a pre-programmed “blacklist” and, if a match is found, actuates a deterrent in the form of a store-bought battery-powered squirt gun.

## **Idea #3 “Fear Bot”**

Fear Bot is a small (cubic foot or less) autonomous robot which runs away from loud noises. The amount of running away that occurs is proportional to the amount of noise that is detected from someone/thing. If screamed at, it'll run. And if whispered, it'll just scooch away. Its purpose is humorous entertainment; it is intended for use by novelty enthusiasts. The sound sensor used is a Matrix Voice board (if we can figure out how to use it). A controller compares the signal from each output, determines the direction of the loudest sound source by a received magnitude, and actuates two DC motors & servos controlling drive wheels such that the device turns and drives away from the triggering sound source.

## **Idea that we went with: Fear Bot**

Given how compressed the timeline is to build an MVP, paired with risks for each idea, Fear Bot makes the most sense to go with for our Practicum Project, with in its base form it being the simplest, while still allowing for a relatively large amount of expansion if time permits.