# GitHub: [sayhiJON/csce5214-project: Project for CSCE 5214 Fall 2022 (github.com)](https://github.com/sayhiJON/csce5214-project)

Fly Detector

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# Goals and Objectives

## Motivation

I have two dogs that play outside in the backyard often and I like to go out there to play with them and spend time outside when the weather is nice. Unfortunately, the dog poop draws a lot of flies to the backyard. Over the years, I have gone through many steps to get rid of the flies, such as using fly traps, spending a large amount of time with a fly swatter, and hiring people to regularly pick up the dog poop, among other things. However, none of these seem to get rid of the flies. The problem seems to be that they reproduce faster than the fly traps, or my swatting, can kill them.

In theory, if I can take care of them faster than they can reproduce it would solve the problem. However, that seems untenable. An alternative solution would be an automated system that kills the flies; this would save me time, effort, and reduce how much they annoy me.

## Significance

Flies are a significant disease vector by carrying parasites, viruses, and bacteria on their bodies and depositing them with their vomit and feces. They have been known to spread significant diseases, such as typhoid, cholera, tuberculosis, and anthrax. Flies have even been used in warfare to spread diseases. Being able to accurately detect flies against a variety of backgrounds through image recognition would be the first step towards creating an automated system that could deal with flies before they become a problem to the people they interact with.

## Objectives

Develop an image recognition system to identify whether a fly is in an image and where the fly is within the image.

## Features

First Pass

* Successfully classifying images with flies as having flies and images without flies as not having flies

# References

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Ostrolenk, M., & Welch, H. (1942). The House Fly as a Vector of Food Poisoning Organisms in Food Producing Establishments. *American journal of public health and the nation's health*, *32*(5), 487–494. https://doi.org/10.2105/ajph.32.5.487