Research Symposium Presentation Outline

1. Project Outline (1-2 minutes)

a)What we did

-Physics Lab

-Slow motion videos of projectiles, collisions, pendulums

b) Python, OpenCV

-Python - widely used, lots of packages, lots of different uses, easy to learn, use

-OpenCV- computer vision library - recognize faces, objects, and track moving objects

c) Objective: given a video of a projectile, collision, or pendulum can we process the video and get usable kinematic information

- position -> velocity -> acceleration

2. Hough Circles (3-4 minutes)

a) Original frame

b) Talk about processing

-Grayscale

-Blur

-Dilate

c) frame that gets processed

d) Hough circle

-what it does

3. Demonstration with pendulum (3-4 minutes)

a) Use — input given, feedback, potential errors and what it does to resolve those

b) Plot

c) Information that you can get out of it

4. What we plan to do (remaining time)