***CODE TO GET A SPEED PLOT***

% Load the csv file containing position y, position x, and time data

data = readmatrix('NF1P1-Run 2-201013-094942-1-cam2-results.csv');

% Extract time data

time = data(:,3);     % time values are in the third column

% Compute the speed between each pair of consecutive positions

pos\_x = data(:,1);     % position x values are in the first column

pos\_y = data(:,2);     % position y values are in the second column

dist\_traveled = sqrt(diff(pos\_x).^2 + diff(pos\_y).^2);

time\_diff = diff(time);

speed = dist\_traveled./time\_diff;

% Create a plot of speed vs time

figure;

plot(time(1:end-1), speed);

xlabel('Time (seconds)');

ylabel('Speed (pixels per second)');

title('Speed vs Time');