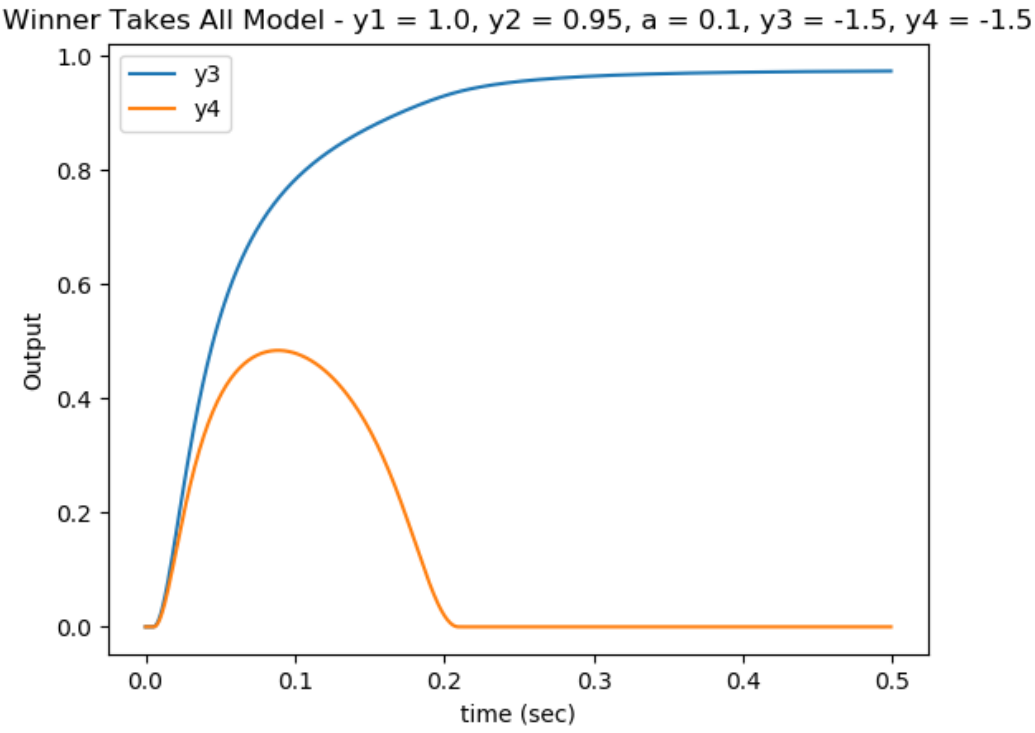
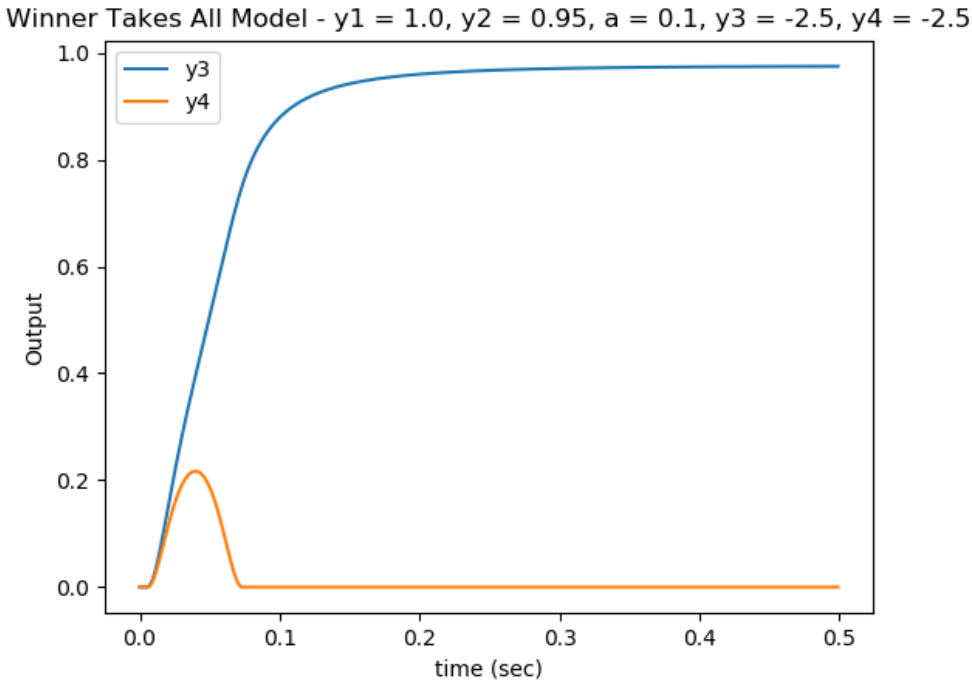
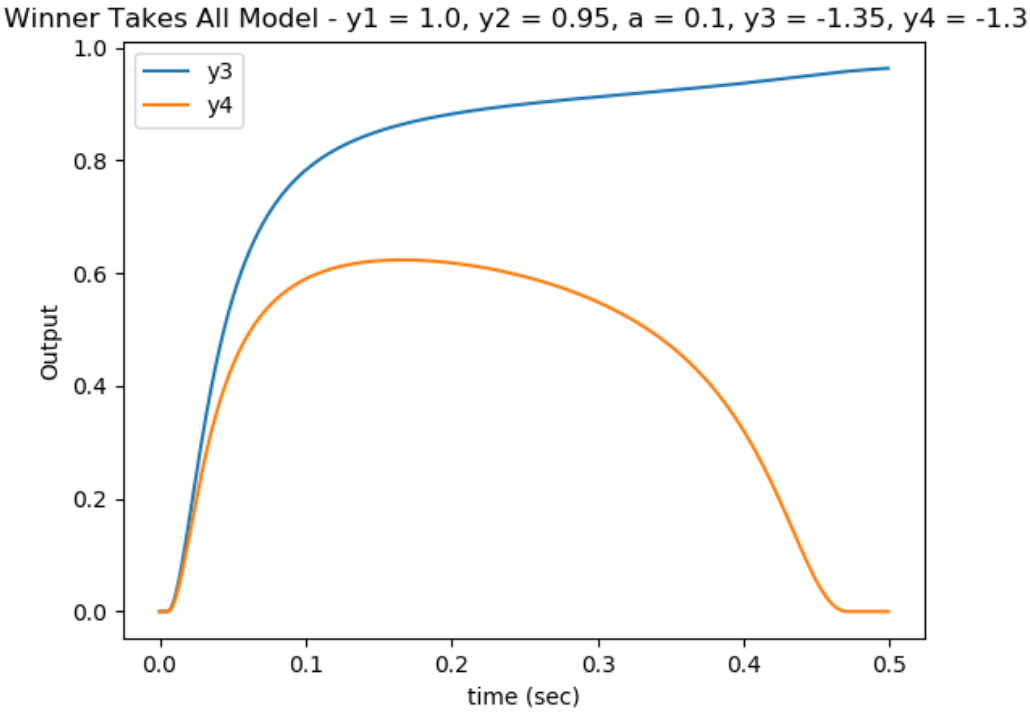
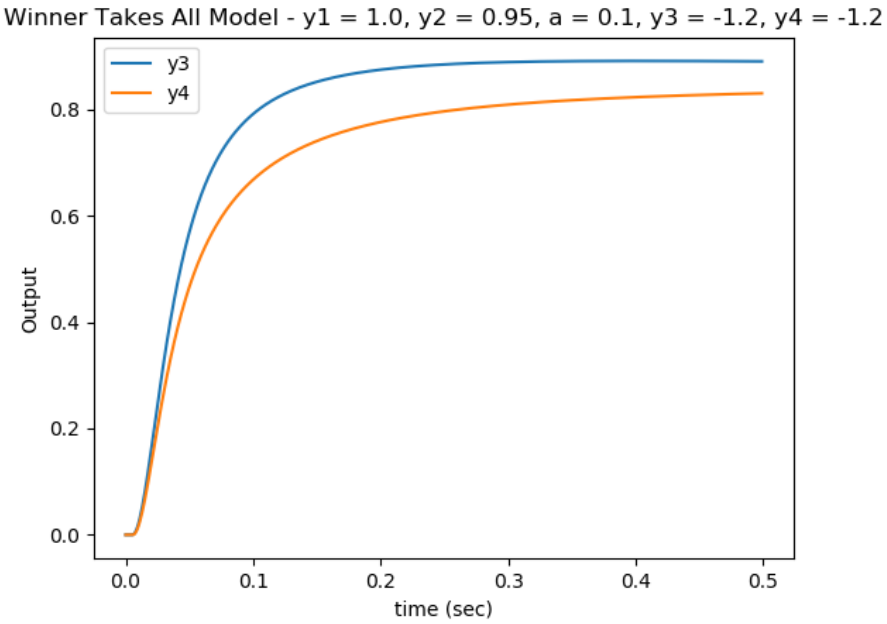
Tristin Glunt
EX. 5
Winner-Takes-All

From experimenting with different inhibitory values for y3 and y4, you can quickly tell that the magnitude of these values greatly impacts the speed at which the winning neuron will dominate the other, completely inhibiting it. If we increase the magnitude, the winning neuron is clear even quicker, if we decrease it enough, the winning neuron never completely inhibits the other (when y3 & y4 =: -1.2). However, slightly higher magnitude, y3 & y4 = -1.35 and we still see a winner-takes-all scenario even if it does take longer.




Winner Takes All Model - y1 = 1.0, y2 = 0.95, a = 0.1, y3 = -2.5, y4 = -2.5
y3
y4
Output
time (sec)
0.0
0.2
0.4
0.6
0.8
1.0
0.0
0.1
0.2
0.3
0.4
0.5


Winner Takes All Model - y1 = 1.0, y2 = 0.95, a = 0.1, y3 = -1.35, y4 = -1.3
y3
y4
Output
time (sec)
0.0
0.2
0.4
0.6
0.8
1.0
0.0
0.1
0.2
0.3
0.4
0.5


Winner Takes All Model - y1 = 1.0, y2 = 0.95, a = 0.1, y3 = -1.2, y4 = -1.2
y3
y4
Output
0.0
0.2
0.4
0.6
0.8
0.0
0.1
0.2
0.3
0.4
0.5
time (sec)