PSYC 6273
Fall 2025

Problem set 2

Use Python and PsychoPy to program a visuomotor experiment that measures a person's ability to track a target on a computer screen using the mouse.

On the course github repository, I have posted a module ps2.py that contains a function ps2.randpos(). This function generates a random trajectory for the target. See the script ps2demo.py for an illustration of how to use this function.

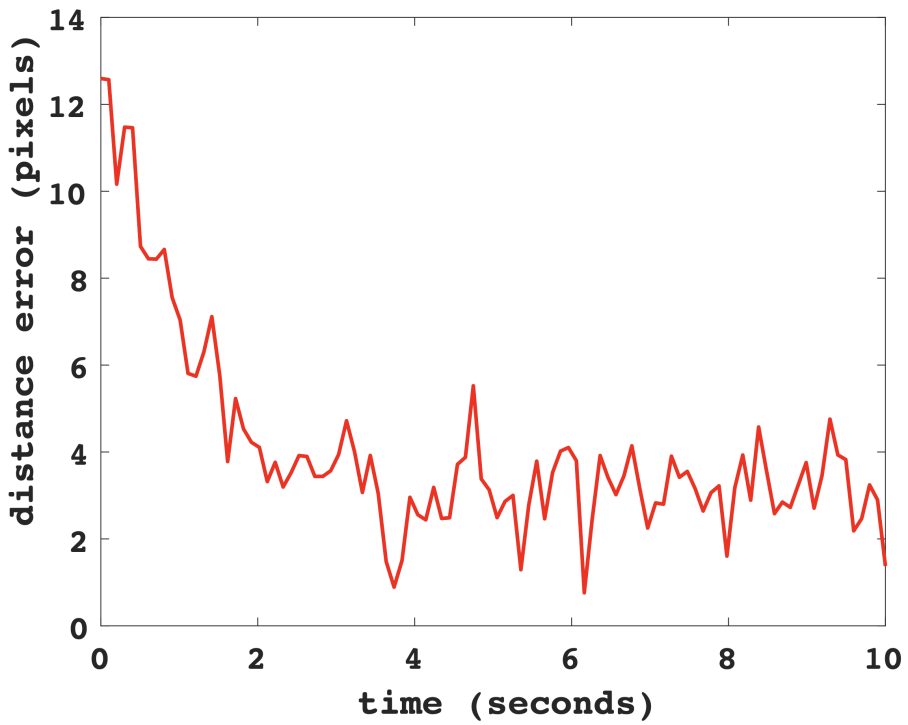
1. Create an experiment with ten trials. On each trial, a small circle moves around the screen for ten seconds, on the random trajectory generated by ps2.randpos(). The subject uses the mouse to move a small plus symbol around the screen. The subject's goal is to keep the plus symbol centered on the moving circle. Hide the default mouse cursor and draw this plus symbol using PsychoPy.

For each trial, record the complete trajectory of the target and the mouse cursor, sampled on each video frame. Also record the distance in pixels between the target and the cursor on each video frame. Save this data in a file. You can choose the format of the data and the file, e.g., save the data as a text file, or as Python variables in a pickle file.

2. Write an analysis routine that loads the data and finds the mean the distance between the target and the cursor at each time point in a trial, averaged over all ten trials. Plot this time course. The plot might look something like the one on the following page.

Email your solutions to me (rfm@yorku.ca) in a single .zip or .tar file named with your last name in lowercase, e.g., murray.zip. Put the experiment and analysis routines in separate Python files. Be sure to include sufficient help text and comments in your code.

Due November 28, 2025


distance error (pixels)
time (seconds)
0
2
4
6
8
10
12
14