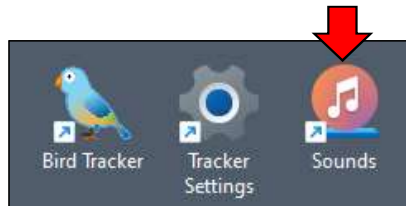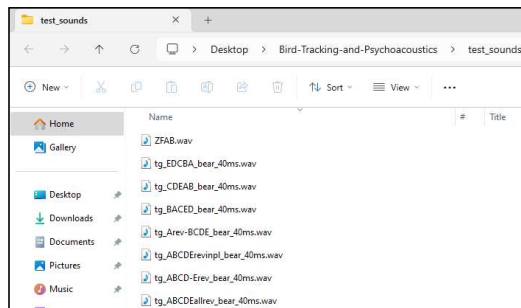# Using Bird Tracker

By: Satya Shah

Upload Test Sounds
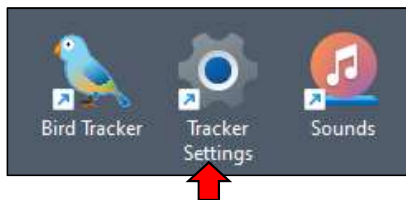

1. On the desktop press "Sounds"

2. Upload .wav file to the opened folder
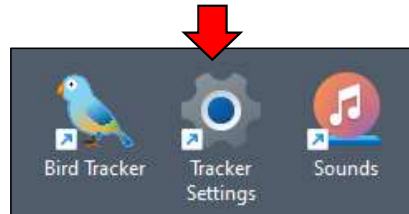3. Close the window explorer

4. On Desktop Press on "Tracker Settings"

5. Add the .wav files to the sound paths array.

Name the sound category and place sounds in respective array

Edit Running Settings
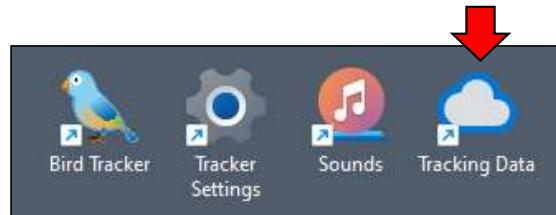

1. On the desktop press "Tracker Settings"

```python
PARAMS = {

    ## The following are the Sound A and Sound B names to be displayed in the plots and final data sheets
    "sound_A_name": "Forward Sound",
    "sound_B_name": "Backward Sound",


    ## Upload the paths to test_sounds folder and place in its respective sound list. It should be formated as ["test_sounds/ABCD_perry.wav", "test_sounds/ZFAB.wav"]
    "sound_A_paths": ["test_sounds/ABCD_perry.wav", "test_sounds/ZFAB.wav"],
    "sound_B_paths": ["test_sounds/ABCDallrev_perry.wav", "test_sounds/CanaryAB.wav"],


    ## These settings determine that the bird is looking forward, stable, and correct location
    "stable_threshold": 25, # Bird must be within +/- this angle to be considered stable
    "location_threshold": 100, # Bird must be within +/- this distance from the center to be considered stable
    "stable_duration": 1000, # Time (ms) the bird must be considered stable before starting test


    ## These settings determine the data collection settings
    "data_collection_duration": 3000, # How long the data will be recorded per sample (ms)
    "sound_duration": 1000, # How long the sound will play (ms)
    "sample_rate": 100, # Number of ms before each data sample during collection (i.e. Data collection per X ms)
    "time_between_sounds": 1000, # Minimum time to wait between successive sounds (ms)


    ## Others
    "switch_thresh": 145, # Angle threshold to switch direction of calculate angle
    "resolution": 120, # The plot angle range will be between +/- of the resultion (i.e. for 120 the y-axis will be 120 to -120 degrees)
    "control_freq": 0.25, # Frequency of control sound playing [0.1 == 10%]
}
```

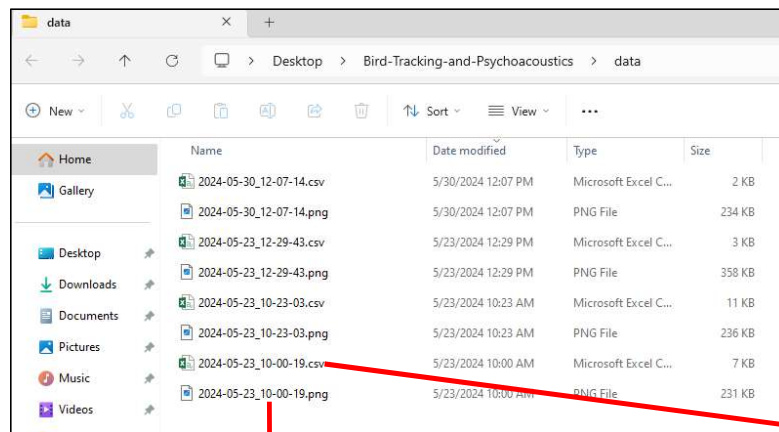2. Change the settings as needed. Each setting should be documented as to what it does

Save the file (file->save) and close out of the program.

Use the image to the left as the "default" settings which are sure to work
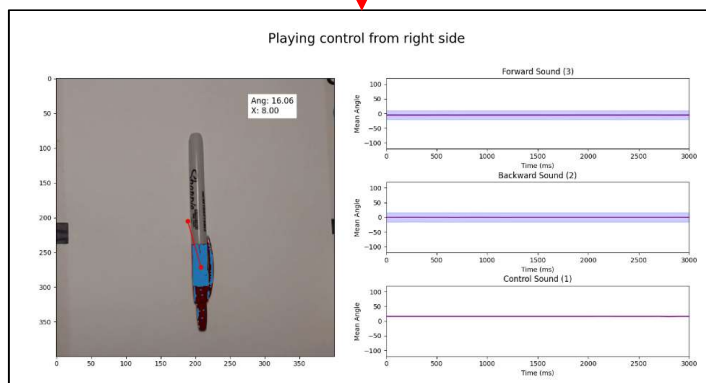
View Trial Data

1. On the desktop press "Tracking Data"

2. All past trials **graphs (.png)** and **data (.csv)** files will be available named by the time and date they were taken
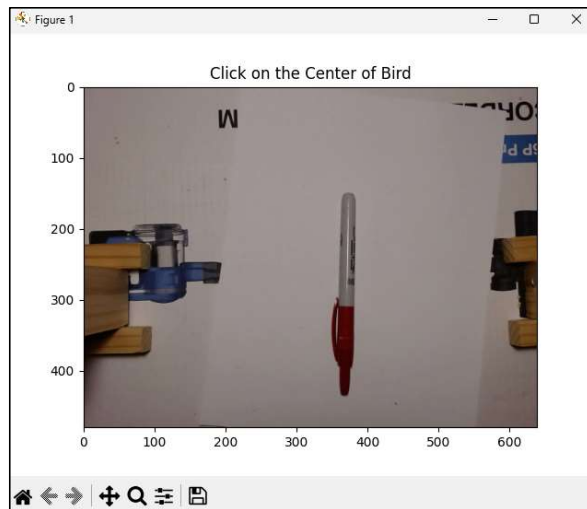
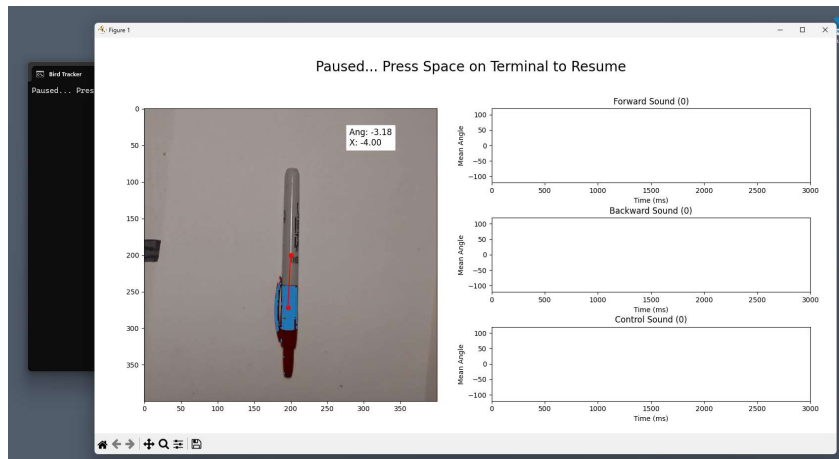# Running The Program

Running the Program

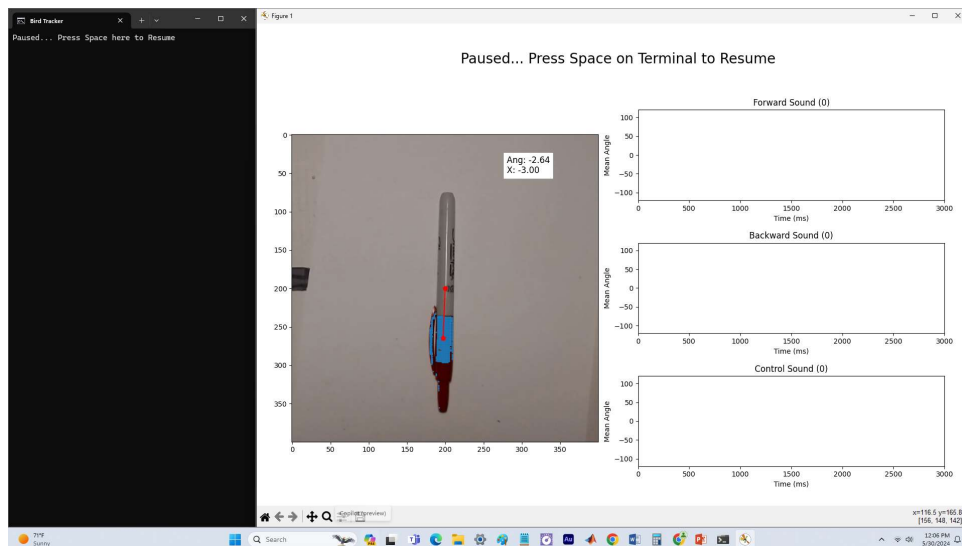1. On the desktop press "Bird Tracker"

2. Click on the center of the birds head

Running the Program

3. The program will open up in a paused state.

Note: Only move and change the size of the windows when Paused

4. Reorganize the Terminal (Left) and App (right) as shown so you have access to both

Note: You can click on the app and simultaneously press *Windows + Right Arrow* to split screen

Running the Program

5. Click on the terminal on the left and press "Spacebar" this will start the program.

Other commands:
    Space: Pause/Resume
    Esc: Exit and Save Data
    Del: Clear Data
    Enter: Override Testing

Note: Must click on terminal before pressing keys, otherwise will not be processed.

Do not run any of these commands while a trial is running as it may crash the program. Wait until a trial is done and no data is being collected

6. You can change the center of the bird by pressing anywhere on the screen.
This is used if the bird has moved and you want to track it where it is.