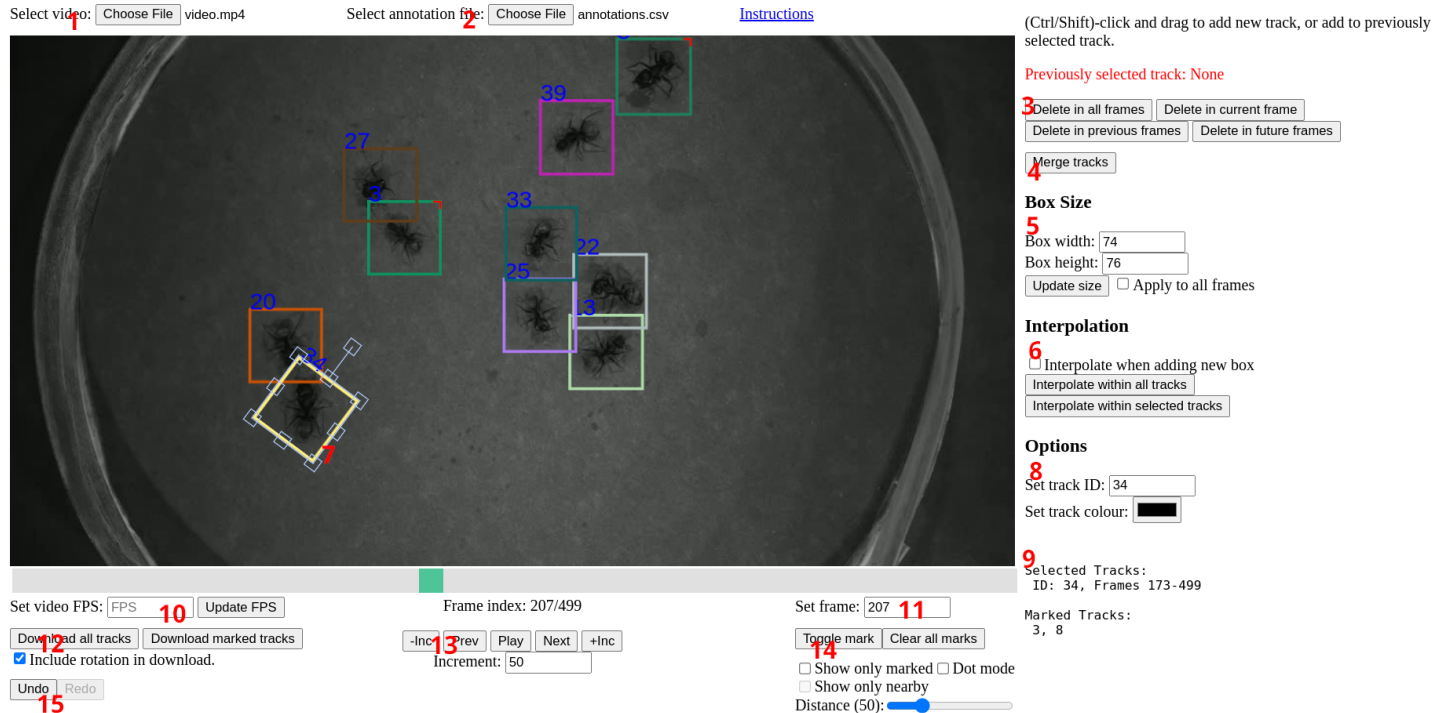


# Annotator Instructions

Refer to the numbers in the below screenshot for the following instructions:



## Setup

**1** will allow you to select a video file to create annotations for.

Optionally, your own annotation can be supplied at **2** for modification. Annotation files must be a csv, with the first 7 columns corresponding to 'image\_id' (frame number), 'track\_id', 'x' (box x position), 'y' (box y position), 'w' (box width), and 'h' (box height).

They may also have an optional 'angle' column specifying the rotation of a box.

## Navigating the video

The scrubber below the video can be used to quickly navigate the video. Pressing 'a' or 'd' will change to the previous or next frame respectively.

The scroll wheel can be used to zoom in and out, and alt+click and drag will pan the camera

You can jump to a specific frame number by using the text field at **13**.

## Selecting tracks

A track can be selected by clicking on its box. This selection is carried over to other frames that contain the track.

Multiple tracks can be selected by using Shift-click.

If one track in a previous frame was selected, this is remembered when adding a new box (track\_id carries over), or merging tracks. The ID of the previously selected track is noted above **3**.

**9** displays a list of currently selected tracks.

## Transforming boxes

The controls that appear when a box is selected can be used to scale and rotate a box.

## Adding a new box

Either Ctrl-click or Alt-click will add a new box, with either the ID of a new track, or the same ID as a track selected in a previous frame.

By dragging the mouse while holding either Ctrl-click or Alt-click, the initial size of the box can be controlled.

## Interpolation

If the 'Interpolation' option (**6**) is selected when extending an existing track to a future frame, additional boxes will be inserted in the intermediary frames using linear interpolation.

There are also buttons that allow you to add new boxes to selected/all tracks via interpolation in intermediary frames.

## Deleting boxes/tracks

**3** contains options for deleting boxes or entire tracks.

-'Delete in all frames': Delete the entire track (i.e. across every frame).

-'Delete in current frame': Only delete the box in the current frame.

-'Delete in previous frames': Delete the track in the current frame and all previous frames.

-'Delete in future frames': Delete the track in the current frame and all future frames.

## Merging tracks

With exactly 2 tracks selected, press the 'Merge tracks' (**4**) button to merge tracks. The selected tracks will be merged into one, with the first-selected track given priority on frames where they overlap.

## Adjusting size of boxes

With any number of tracks selected, **5** controls the size of the boxes. If 'Apply to all frames' is ticked, the size is updated across all frames. Otherwise, the size is only applied to the current frame.

Size can also be controlled by using the controls that appear when selecting a box. Changes made this way are not applied to all frames.

## Adjusting position of boxes

With one track selected, right-clicking will move the location of the track in the current frame.

## Adjusting track ID/colour

**8** allows you to update the ID or colour of selected tracks (applied to all frames).

## Reverting changes

**15** contains buttons for undoing/redoin changes. A history of the last 30 changes is stored.

## Options for better visibility

**14** allows you to toggle several options to improve visibility when dealing ants are clustered.

- 'Show only marked': Only display boxes for tracks that have been marked for download.

- 'Dot mode': Replace boxes with a dot centered on each ant.

- 'Show only nearby': Only display boxes that are within a certain radius (controlled by the distance slider) of selected tracks.

## Downloading tracks

**12** contains options for downloading annotations. 'Download all tracks' will download a CSV containing all annotations in their current state. 'Download marked tracks' will download a CSV containing only annotations for tracks that have been marked for download.

To mark tracks for download, select them and then toggle their mark (**14**).

## Hotkeys

Hovering over buttons will display a tooltip indicating their hotkey.

- 'a': Navigate to previous frame

- 'd': Navigate to next frame

- 'w': Navigate to last frame

- 's': Navigate to first frame

- 'b': Toggle mode for adding a new box/track

- 'm': Mark selected tracks

- 'r': Delete selected tracks in all frames

- 'x': Delete selected tracks in current frame

- 'Ctrl+Z' Undo

- 'Ctrl+y' Redo

## Advanced: Setting video FPS

Using the correct FPS is required for the annotator to function properly.

In case the FPS of the video is not correctly detected, **10** allows you to change the FPS.