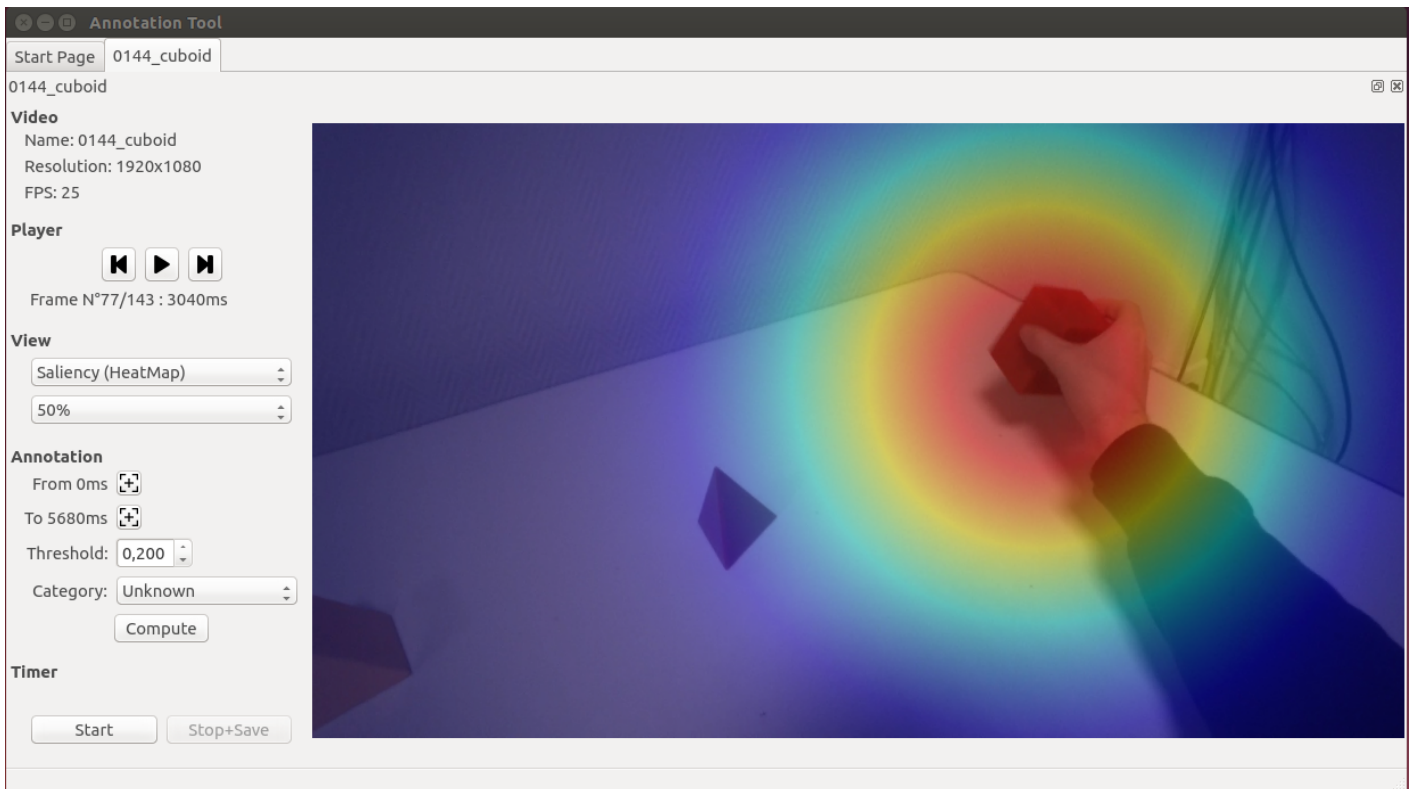


# Annotation Tool Manual

Screen-shots guide through



example window

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# I. Dataset folder organization

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The **dataset folders** must be structured the following way:

- **Categories.txt:**  
Text file listing the categories. Each categories are named on a separate line.
- **Statistics.txt:** (generated by the Annotation tool)  
Text file generated by the annotation tool. Each line features information on the annotation of a video:
- Each **subfolder** is considered as a project by the annotation tool.

A **Project** refers to a video in the dataset. A project contents are regrouped in a folder named after the project, containing:

- **Categories.txt:** (generated by the Annotation tool)  
Text file with on the first and only line the name of the category of objet that this video features.
  - The **Video subfolder** contains the RGB images of each frame of the video.
  - The **Saliency subfolder** contains the saliency images of each frames of the video.
  - The **Annotation subfolder** contains the annotation images of each frames of the video.
- All of these are generated upon importation.

Example of what a dataset **Categories.txt** file contains:

```
Unknown
Bad
Sphere
Cone
Cylinder
...
```

Example of what a dataset **Statistics.txt** file contains:

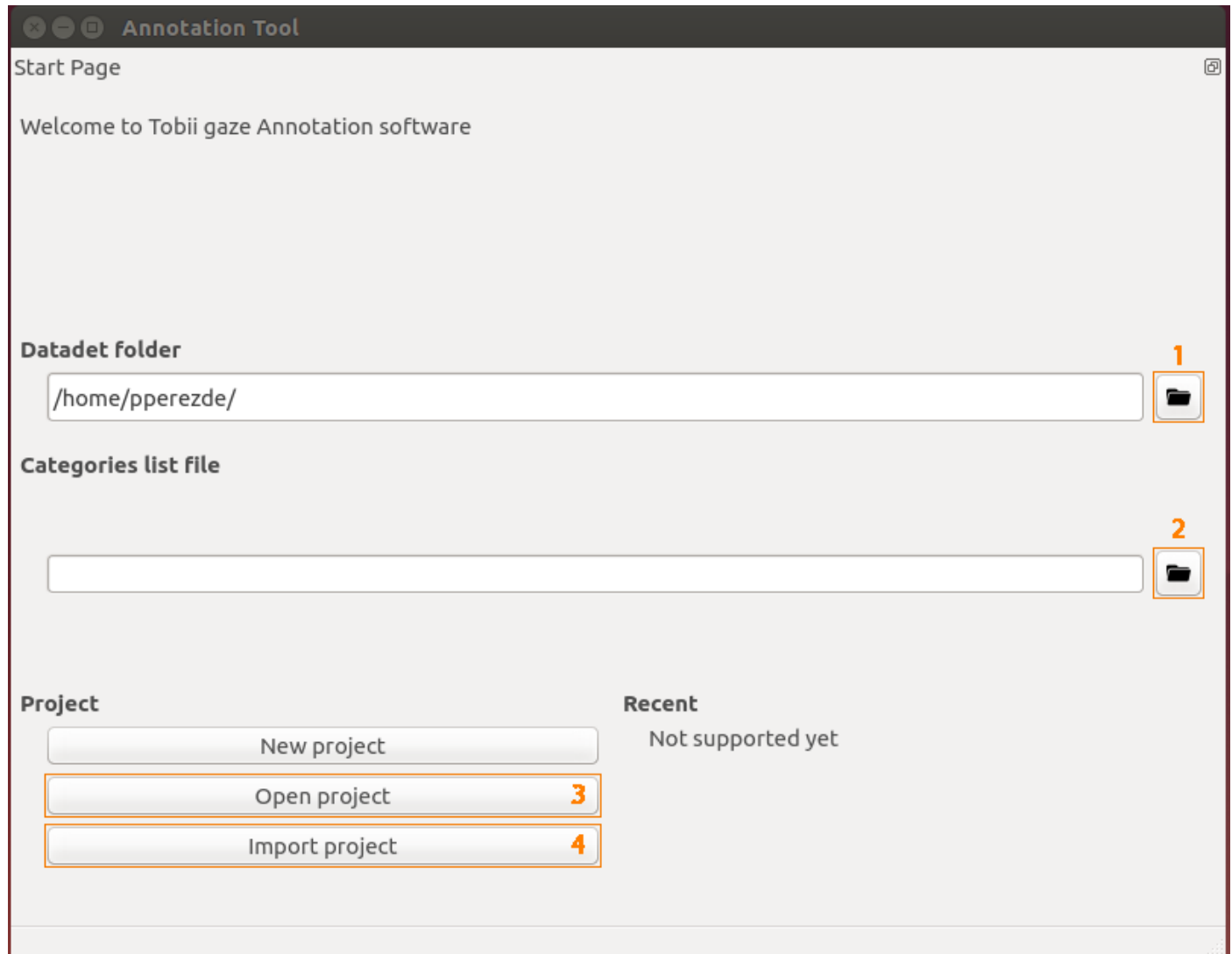
Video	Duration(ms)	NbFrames	Category	NbInstancesFrames	TimeOnScreen	AnnotationTime
0001_prismTri	9560	240	Triangular_Prism	118	4720	464319
0002_hemisphere	14880	373	Bad	0	0	226557
0003_prismTri	9920	249	Bad	0	0	103424
0004_cone	6560	165	Cone	119	4760	133968
0005_pyramidTri	11800	296	Triangular_Pyramid	216	8640	901928

Notes:

- Every images in all Video, Saliency, Annotation, must be named using to following format:  
Frame\_%d.png  
where %d is the time-stamp of the frame in milliseconds.
- Only frames with time-stamps stating at 0, and successive with 40ms between each is currently supported.
- The extension “png” is the one used to save the file upon importation. The annotation tool should be able to read jpg as well, but this has not been tested.
- Use the DatasetManager executable to check that your dataset folder is structured the right way.

## II. Start Page

When you open the Annotation tool for the first time, the following page will appear:



The annotation tool “start page”

This page provided you with functionalities to explore your dataset:

1. This button lets you select your “dataset folder”.
2. This button lets you select the “categories list file” associated to your dataset.
3. This button lets you open an existing *project* (shortcut: Cmd+O or Ctrl+O)
4. This button lets you import eye tracking data into a new *project*. (Cmd+I or Ctrl+I)

### Notes:

- Videos of a dataset are referred to as “Project”.
- The “dataset folder” is used as the root path for all open / import actions.
- The “categories list file” is a simple text file where each line is a different category. It is used to fill up the combo-box letting you choose the category of a video.

### III. Importation Wizard

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The importation wizard is used to read a pair of json/mp4 files, produced using Tobii Glasses 2, and construct a new project in your dataset folder:

**Importation Wizard**

**General**

Name

**Video**

**1**

**640x360** **2** Resolution

**Gaze Data**

**1**

☐ Import accelerometer recordings

☐ Import gyroscope recordings

☐ Keep all recordings

☐ **3** Force interpolation

☐ **4** Recompute distance

**Other Option**

☒ Compute saliency maps

☐ Compute heated frames

☐ Compute weighted frames

Functionalities:

1. Use either one of these buttons to select one of the json or mp4 file, the other one will be selected automatically from the same folder (the Tobii Glasses 2 store these files in the same folder). This will also set the name of the project.
2. Use these combo-box to select the resolution at which you want the video frames to be imported. Tobii Glasses 2 native resolution is 1920x1080p.
3. If you select this option, fixation points will all be interpolated, even if their time stamp match one frame. (default is off)
4. This option forces the importation module to recompute the distance of the fixation to the camera, even if this information is provided by the glasses. (default is off)

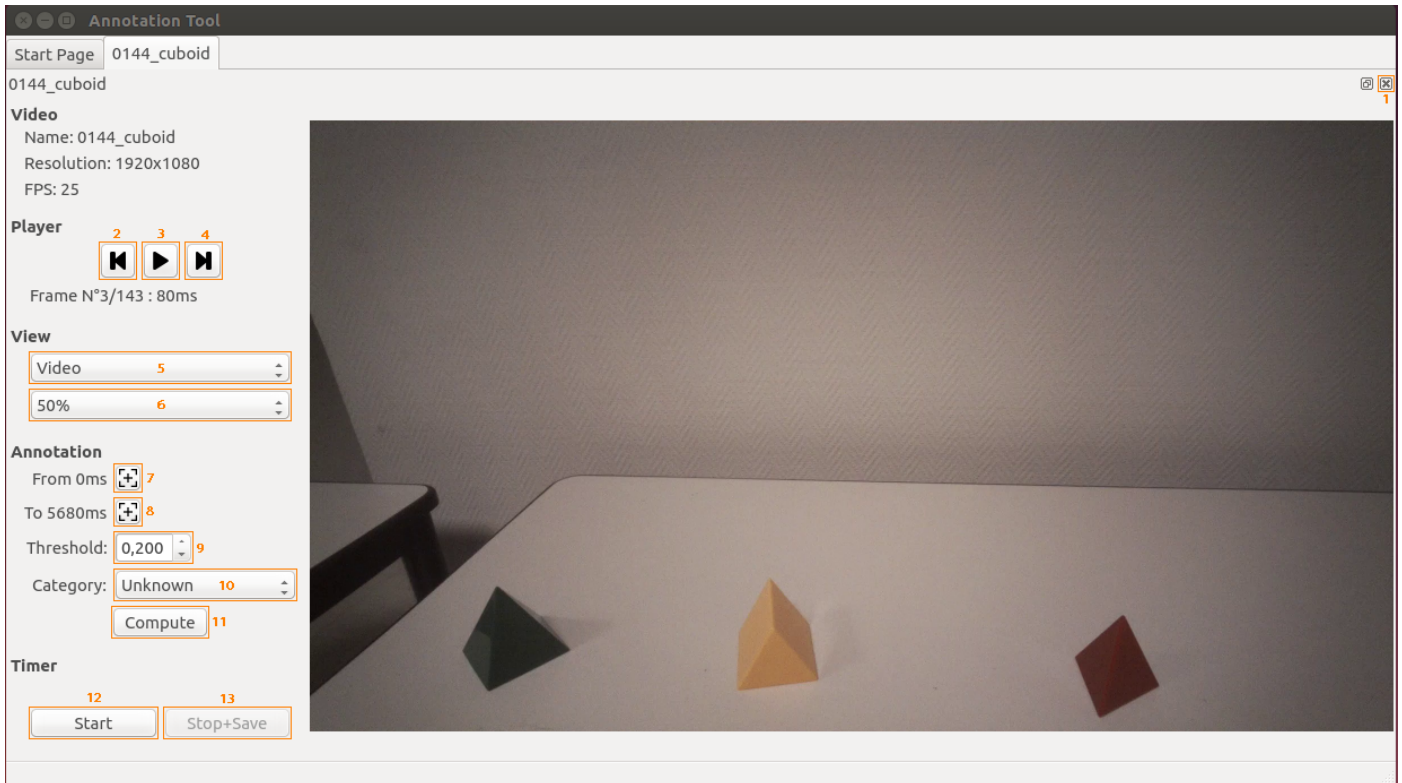
---

Notes:

- json/mp4 must be in the same folder (with no other files of the same extension in it) but they can have different file names
- you can add text to the name to import the project in subfolders of the dataset folder.

## IV. Project Page

The project page lets you explore a sequence, with the possibility to visualize different channels (views), annotate your sequence, and track your annotation time:



Functionalities:

1. Close the current project tab (shortcut: Cmd+W or Ctrl+W)
2. Play back the previous frame
3. Play the video
4. Play the next frame
5. Select the current view
6. Select the relative resolution of the display
7. Set the annotation to start at the current frame timestamp (included)
8. Set the annotation procedure to stop at the current frame (included)
9. Chose the annotation threshold. If you select the view (5) to be one of the annotation visualization options, you can have the live effect of this value.
10. Set the category of your sequence. This has a direct effect on this project **Categories.txt** file.
11. Apply the annotation method in the selected interval, with the chosen threshold. All frame outside the selected interval are set to black.
12. Start or restart the annotation timer.
13. Stop the annotation timer and save statistics to the **Statistics.txt** file: creates a new line in it.

# V. Annotation procedure

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On the start-page:

1. Select your dataset folder
2. Select your categories file
3. Press "import"
4. Choose the files you wish to import with preferred settings.
5. Press "import" (this may take a while)

The project page then open:

6. Choose the view and relative resolution you prefer using button 5 and 6.
7. Start the timer using button 12.
8. Play the video until the eye is fixing the object (the saliency should cover the object)  
Use buttons 2, 3 and 4 to select the exact frame.
9. Press button 7 to select this frame as the beginning for the annotation method.
10. You can set the category at this time using button 10
11. Change the visualization method (view) using button 5.
12. Select the threshold of the annotation method.
13. Play again the video, this time until the saliency no longer covers the object of interest.
14. Go back to the last frame the saliency covered the object using button 2 and 4.
15. Press the button 11 to compute the annotation frames
16. Press button 13 to save the annotation statistics.
17. Press button 1 or Ctrl+W to close the project page.