Image Tagging

Sloth

Setup

In order to tag images, we use a piece of software called Sloth. To install it from the robosub debian repository, run the following command:

```
sudo aptitude install sloth
```

Now that you have sloth, you need to clone the `vision_dev` repository. To do that, run this command wherever you want to clone it:

Using an SSH key (Do this if you have completed the Getting Started setup):

```
git clone git@github.com:PalouseRobosub/vision_dev.git
```

Without an SSH key:

```
git clone https://github.com/PalouseRobosub/vision_dev.git
```

Using Sloth

To use sloth and start tagging images, you can run the following command.

```
sloth -c /path/to/vision_dev/sloth/robosub_config.py
/path/to/annotation/file
```

-c Is a flag to give the path to a configuration file. This file is provided in the vision_dev/sloth directory. The path you provide should point to this file.

The last argument is a path to an annotation file. This is most likely named something like `labels.json`. You will need to provide this path in order to tag images.

Should you find this tedious, there is a script in the sloth directory of the vision_dev repository which performs some of this for you. It can be used as follows:

```
./robosub_sloth.sh /path/to/annotation/file
```

This removes the need to add the -c flag repeatedly. This script can also be symlinked to without issues.

Sloth Keybindings

The full list of keybindings used in sloth can be found in the robosub_config.py file near the bottom. A shorthand list is provided below

Default keybindings

- **Space** Mark image as labeled/confirmed and go to next
- **Backspace** Next image/frame
- **PgDown** Previous image/frame
- **PgUp** Previous image/frame
- **Tab** Select next annotation
- **Shift+Tab** Select previous annotation
- **Ctrl+f** Fit current image/frame into window
- **Del** Delete selected annotations
- **Esc** Exit insert mode
- **Shift+l** Mark current image as labeled
- **Shift+c** Mark all annotations in image as confirmed

Robosub Specific

- **F5** Toggle the visibility of label names on annotation boxes
- **Ctrl+Shift+Del** Delete all annotations from the current image and mark it as unlabeled
- **c** Copy all annotations from the previous image to this one
- **n** Mark image as labeled/confirmed and copy annotations to next image. (Equivalent to **Space** then **c**)

Annotations

- **s** Start Gate Post
- **p** Path Marker
- **t** Torpedo Target
- **w** Roulette Wheel
- **1** Die 1
- **2** Die 2
- **3** Die 3
- **4** Die 4
- **5** Die 5
- **6** Die 6

Sloth Mouse Controls

While creating annotations, the following are useful mouse controls.

- **Right Click and Drag**

  Resize an annotation. Resizing is based upon the quadrant of the annotation clicked on.

- **Ctrl+Left Click**

  Select multiple annotations at once.

Data Management

Getting, validating, and returning labeling data is handled through the `rslabel` utility program. It currently only supports python 2.x versions. To install it, run

```
sudo pip install rslabel
```

There are a number of commands to be used with `rslabel`, including `show`, `get`, `return`, `upload`, and `collect`.

Command	Description
`rslabel show`	Provides information about the number of datasets labeled, number of images properly validated, and counts any labeling sessions in progress.
`rslabel get`	Grabs an image dataset for labeling and places it in your current directory. The `--validation` flag can be supplied to get labeled data to validate.
`rslabel return [JSON]`	Returns a dataset to the server. If the data has not been completely labeled or validated, it will be returned for someone else to complete in the future.
`rslabel upload [ROSBAG]`	Takes a ROS bag file and break the images out into datasets for labeling. It will then upload the files to the server for labeling.
`rslabel collect`	Collects all of the labeled and validated images into a single dataset for use with object detection training.

From:
https://robosub.eecs.wsu.edu/wiki/ - **Palouse RoboSub Technical Documentation**

Permanent link:
https://robosub.eecs.wsu.edu/wiki/cs/vision/image_tagging/start?rev=1521697716

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