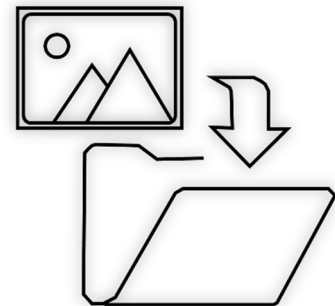16 DECEMBER 2019

USER MANUAL
IMG2DIR
(IMAGE TO DIRECTORY)

A SOFTWARE DEVELOPED UNDER PG09
ALGORITHMS AND SOFTWARE FOR OBJECT RECOGNITION

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About this document

This user manual is a guide to all aspects of using IMG2DIR: Image to Directory (version 1.2.0), an open source software written in Python 3 that allows users to assign images to sub-directories while previewing the images, by simply clicking buttons.

The manual focuses on the practical usage of IMG2DIR – if you are looking for information on the functionality of this software, this is the guide that would provide you the information you need. If you are a developer seeking details of the source code, feel free to visit the GitHub repository (https://github.com/oleelamhy/IMG2DIR), which has been made available since version 1.2.0.

Overview of the Software

IMG2DIR ("Image to Directory") is an open source software written in Python 3 that allows users to assign images to sub-directories while previewing the images, by simply clicking buttons.

IMG2DIR is a by-product developed in an INTERREG V-A Deutschland-Nederland funded project SPECTORS ("Sensor Products for Enterprises Creating Technological Opportunities in airborne Remote Sensing"; project number 143081). And was originally designed to assist the image labeling process before training a convolutional neural network for image classification task.

Features of the software

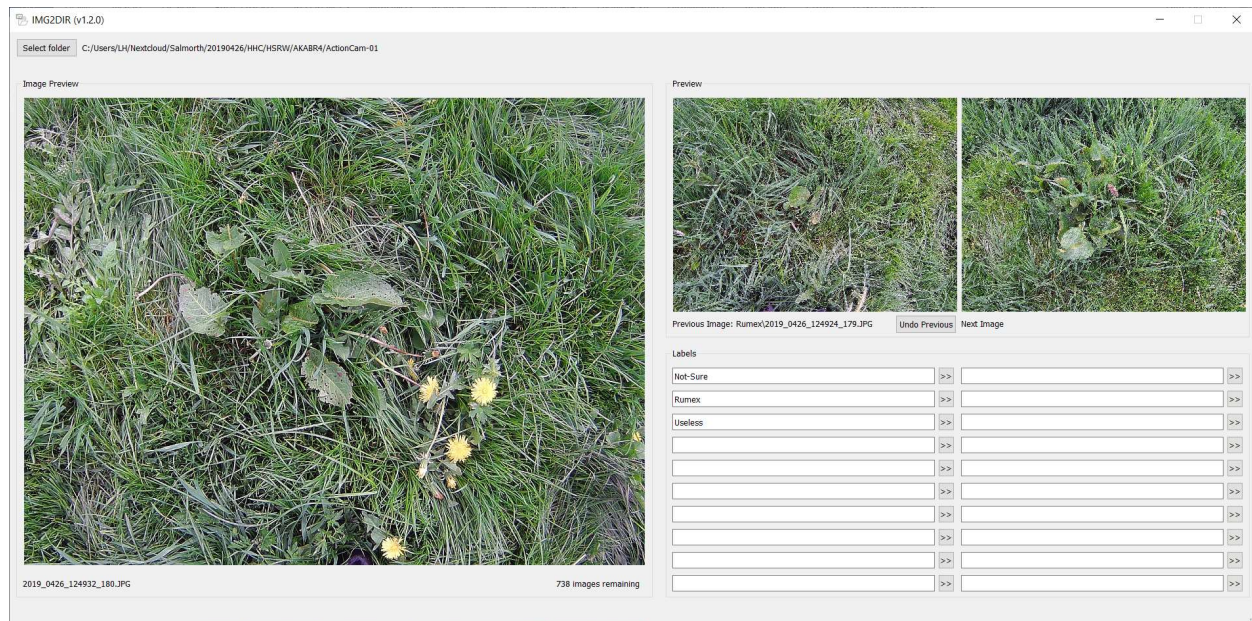IMG2DIR consists of the following features:

- Assign labels by moving the image to a sub-directory (name of the sub-directory can be used as a label in the future)

- Select folder with images, display the selected folder name, the first and second images, and previous processed image if exists.

- Load the labels by scanning the first level of sub-directories within the selected folder.

- Input new label to automatically create corresponding sub-directory.

- Support up to 20 labels.

- Re-do function as long as the user have not selected new directory to process

- Display the number of remaining images, the current image name and the previous processed image name if exists

System requirements

The followings state the minimum system requirements to run the software.

- Windows 7

- i3 processor (CPU)

- 64-bit operating system

Interface of the software

"Select folder" button: This button is on the top left of the interface, which allows user to select which folder to process. When the selected folder is valid and contains images, the name of the selected folder is displayed next to the button.

"Image Preview" panel: The left panel is used to display the image currently waiting for labeling. Underneath the displayed image, the image name is shown on the left, while on the right is the number of remaining images (inclusive) within the selected folder.

"Preview" panel: The upper right panel is used to display the next image and previously processed image if existed. If there is any previously processed image, the corresponding image name will be displayed to allow user to double-check which sub-directory the images moved to.

"Undo Previous" buttons: The undo button located beneath the previous image preview is used to undo the previously processed labeled image. Once clicked, the previously labeled image will be moved back to the selected folder. The list of image waiting for labeling will be refreshed. [*Note* it is possible to undo the images, only if no new image directory has been selected.]

"Labels" panel: The bottom right panel is used to input labels. The button next to each text field is used to assign label to the image. Once clicked, a sub-directory with the label name will be created, if not exists before. The image will then be moved to the sub-directory.

Status bar: The status bar at the bottom of the interface aims at providing critical information and error messages concerning initialization, folder selection, and image labeling.

Getting started

Obtain the software

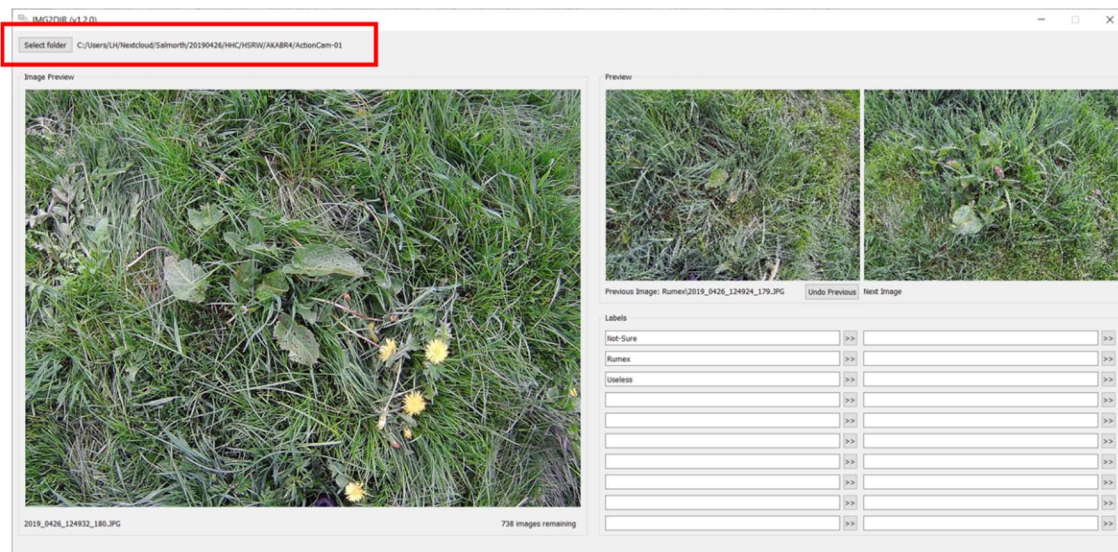The standalone executable (.exe) for Windows can be obtained from the Release page of the GitHub repository: https://github.com/oleelamhy/IMG2DIR/releases

For minimum system requirements, please refer to the Section "System requirements".

Workflow of the software

IMG2DIR is designed to label images, i.e. moving images to designed sub-directories, by simply clicking buttons. The workflow can be described as follow.

1. Select an image directory

2. Input labels into the text fields

3. Assign that label to the image

4. If necessary, undo the last image
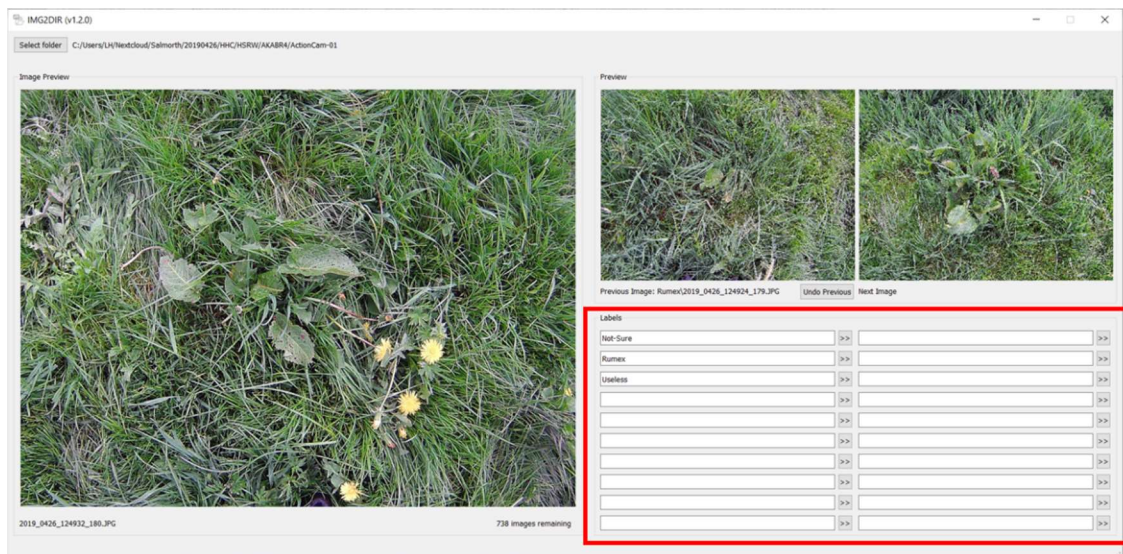
Select image directory

When the "Select folder" button is clicked, a dialog will be prompted to select a folder. Select a directory that contains the images to be labeled.

When images (.jpg, .png, and .tif) are detected –

(1) The name of the selected directory will be shown next to the button;

(2) Existing sub-directories' names will be shown as labels (*Note* only the first 20 labels will be displayed if more than 20 sub-directories are detected.);

(3) The first image and its name will be displayed in the "Image Preview" panel, as well as the remaining number of images; and

(4) The next image, if any, will be displayed in the "Preview" panel.
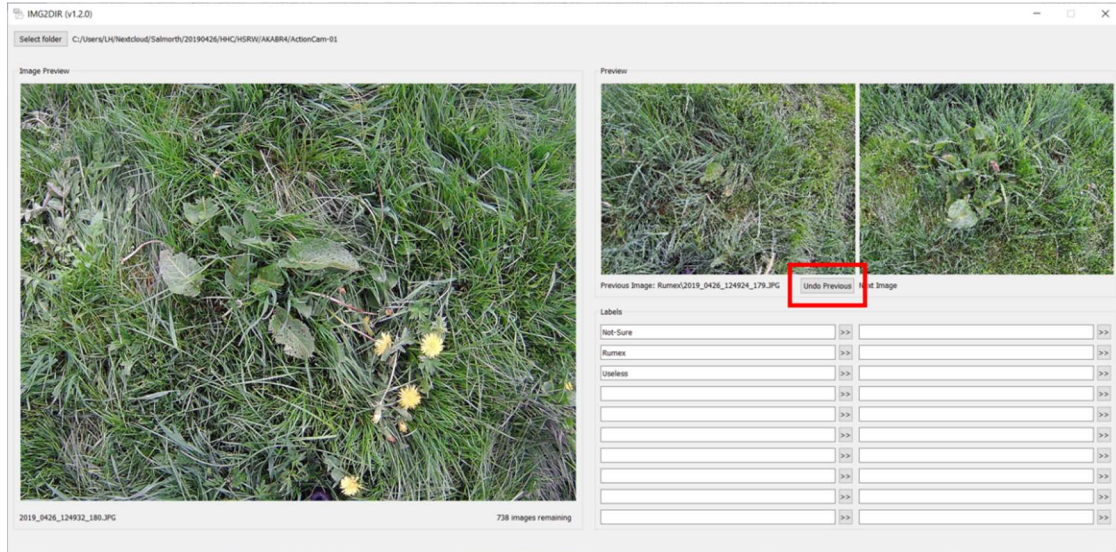

Assign label to an image

To assign a label to the image, or in other words, move the current image into a designated sub-directory, simply click on the button right next to the text field of the label. User can also input a new label in any of the empty text field under the "Labels" panel.

Once the label has been assigned –

(1) A sub-directory with the name of the label will be created if not exists already;

(2) The image will be moved from the selected directory to the sub-directory;

(3) The image will be displayed on the left of the "Preview" panel with the sub-directory and image name shown below; and

(4) The "Image Preview" and the next image in the "Preview" panel will be updated if any images are remain for process.

Undo last labeling

If user wishes to undo the previous labeling, this can be done by clicking the "Undo Previous" button beneath the previous image preview panel.

Once the button is clicked –

(1) The previous processed image will be moved from the sub-directory to the selected directory;

(2) The images, the name of the images and the number of remaining images will be refreshed in all preview panels; and

(3) The list of labels will be reloaded by scanning through the selected directory, and will be displayed alphabetically.

[*Note* it is possible to undo the labeling process, only if no new image directory has been selected.]

Acknowledgement

The software IMG2DIR is a by-product developed in the SPECTORS Project, a Dutch-German cooperation project funded by INTERREG V-A Deutschland-Nederland (project number 143081).

Copyright information