

Devision GUI user guide

Welcome to the Devision GUI user guide

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Introduction

Welcome to the Devision GUI user interface, created by the LSU math clinic team. This application is designed to run image count prediction and classification models from Stardist. As of writing, this application supports frog egg prediction, frog egg classification, and oyster seed count prediction.

QuickStart guide

1. Navigate to [Tags · LSU-Devision/GUI \(github.com\)](#) and download the latest version
2. Run the executable app
3. Select a folder containing the model relevant to your work
4. Select the image files you want to run the model on.
5. Press predict all
6. Press the excel window
7. Press export to excel
8. Open the excel from the auto generated output folder, this will be in the same folder
as your executable
9. Enjoy your results!

Window Guide

All windows have associated tooltips. If you hover over a button, after a short delay a description of the button will appear in the program under the cursor

Mainframe Window

The Mainframe window is the main page of the GUI. It is the only page automatically displayed on start-up. It contains the main functions of the program for prediction and selection, and with the right settings, this can be the only page you need to run the software.

Select Model Folder:

This button opens a file dialog to select the model. To select the model, select the folder, not the folder contents, of the model. The text above will display “current model: “followed by the name of the folder selected.

Select Files:

This opens a file dialog to select the image files you want to predict. You can select one or multiple files for the program. Only image files will be accepted for prediction. Any files that are not image files will cause the program to display an error message, and all the files selected will not be accepted

Predict all:

This button runs the predictions on the images selected. This button will be dimmed out until a model is selected. Afterwards the button will be available. If you do not have an output folder. Then one will be created for you after the predictions are complete. As of writing, using this button with no images selected will create an error in the program. While predicting, a progress bar will display in a pop up with an estimate on the amount of time needed to predict. This time may vary. The time will be faster if your computer has a NVidia graphics card, otherwise it may be slower. After the predictions are complete, a success message will display and include the total amount of time taken for predictions.

Slideshow:

The slideshow will either display as one or two frames in the middle of the mainframe depending on whether the save images to output setting is turned on or off at the start of the program. After you have selected your images, you can cycle through the images using the previous and next buttons. Above the slide show you will have a reference to the current file, and below you will have the number predicted label which will be empty until after the predictions are completed. If save images to output is turned on and after you make your predictions the second slide will display the predicted image. If you are using a model for classification, then you will also have some details on the classification after the prediction is made.

Clear Images:

The clear images button will clear the images from the slideshow. If the clear data when clearing images setting is turned on, then it will also clear the predicted data from the program.

Help:

This is the help page button, soon to be replaced by Tooltips and this guide

Excel Window:

This window opens to display all the Excel related operations. Above this button is the Excel file label. After an Excel file is loaded into the program, its name will be displayed here. If the label says None, then there is no Excel file in the program.

Settings:

This opens the settings window.

Excel Window

There are 3 tabs on the top of the window currently, Basic, Columns, and File Names.

Clicking each tab will resize the screen and display a separate set of buttons.

Basic Tab

This tab contains the basic functions for Excel files

Export to Excel:

This exports your current data in the program into a new or previously loaded Excel file. If the Excel file is open, or if the Excel file has read only permissions, then an error will be

displayed, and the data will not be exported. If the Headers of the excel file do not match the list of appropriate headers or if the headers have duplicates, then another error will be displayed, and the data will not be exported. The Headers are case sensitive as of writing. If the headers are acceptable but in a different order, then the program will ask you if you want to save the order of the columns to your Excel column settings. If yes is selected, then your column settings will be changed, and you can see the new order under the columns tab. If you have not loaded an Excel file into the program then the program would create one for you with a default name, or the name given in File names tab. The data will be formatted according to the column settings into your new excel sheet and the sheet will be loaded into the program. A success message will be displayed after the ordering is completed.

Load Excel:

This loads a selected excel file into the program. The data will be exported to this file. The name of the Excel file will be displayed on the mainframe Excel label.

Clear Predictions:

This manually clears the predictions from the program. This can be done automatically with adjustment of either the automatic export to excel or clear data when clearing images setting turned on.

Clear Excel File:

This will remove the Excel file from the program. The excel label on the mainframe will be reset to none

Columns Tab

Column Dropdowns and Labels:

The columns tab contains dropdown columns for each column preceded by a label representing the header's name for each column. Each dropdown column has a value 1-5 and None which indicates the order in which that column will be displayed. The None option will set the Column to not be exported to the excel sheet. The columns will have to be saved before the ordering is used for the export, otherwise the previous order will be used for export.

Save Button:

Saves the column ordering. Will not save if the columns are not mutually exclusive. That is, two columns cannot have the same ordering. If a number in the order is skipped, such as three columns are enabled with the ordering 1,3, and 5, then the columns will be displayed in the order of 1,2, and 3. A success message will display after the saving of the columns

File Names Tab

Save excel file name:

This has three parts. The new excel file name label, the field to enter the name, and the save excel file name button. You can enter the desired name into the field. The name cannot contain any of these characters (\, /, :, ; ?, *, <, >, |, ", .) as they are forbidden

characters for saving file names. Likewise, these names are not available (CON, PRN, AUX, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9) as these names are reserved for special files within a computers operating system. The name 'None' will be forbidden as well. All forbidden names cannot be used in Capital form, lowercase form, or a mixture of both. And your file name cannot end with a space. If any of these conventions are broken, then an error message will display, and the name will not be saved. Upon saving an acceptable name, a success message will be displayed.

Settings Window

The settings window has two tabs, Basic and Advanced.

Basic Tab

This tab contains all the basic settings in the program. There are more planned in the future. Each setting is preceded by a button and a label indicating whether that setting is on or off. Each button can be clicked to toggle the setting on or off. After each toggle, the label will change to reflect the status of the setting. Each setting is saved after it is toggled and will load into the program in the last state it was in before close.

Automatic Export to Excel:

If this setting is toggled on, then after the prediction the data will be exported to a new Excel file or a previously selected Excel file depending on if an Excel file was loaded into the program.

Automatic Clear Data on Predict:

If this setting is toggled on, then after the prediction the data will be cleared from the program. Currently, if this setting is on and the automatic export to excel setting is off, then you will delete your data after each run without saving. Do not do that. A feature is coming to where this will not be allowed in the future.

Clear Data when Clearing Images:

If this setting is on, the data will be cleared when the clear images button is pressed.

Save Images to output:

If this setting is on, then the predicted images will be saved to the output folder. If this setting is on when the program starts, then you will have two frames displayed instead of one and the predicted images will display in the second frame of the slide show. If it is off on startup then there will only be one frame. If there are two frames and this setting is turned off, then there will not be a predicted image in the second frame of the slideshow. Also, turning this setting off will predict the images twice as fast as if it were on.

Reset to default settings:

This button resets the settings to default. The default settings are:

Automatic Export to Excel: off

Automatic Clear Data on Data: off

Clear Data When Clearing Images: on

Save Images to Output: off

Try these setting runs:

Speed run settings:

Automatic Export to Excel: on

Automatic Clear Data on Export: on

Clear Data When Clearing Images: on

Save Images to Output: off

Presentation settings:

Automatic Export to Excel: off

Automatic Clear Data on Export: off

Clear Data When Clearing Images: off

Save Images to output: on

