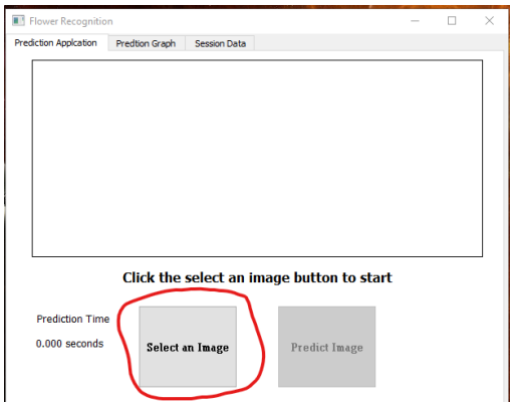
Dataset

The data set used to start the initial train of the flower image recognition models was from Kaggle.com (You can download the dataset here). This data set has 4,242 images. In the dataset of images, there are 769 are daisies, 1055 are dandelions, 784 are roses, 734 are sunflowers, and 984 of the images are tulips. These images will be used to create the initial models for the flower image recognition program. Later as new flower installations are placed the casino's security cameras will be used to update the model with the new flowers in the displays.

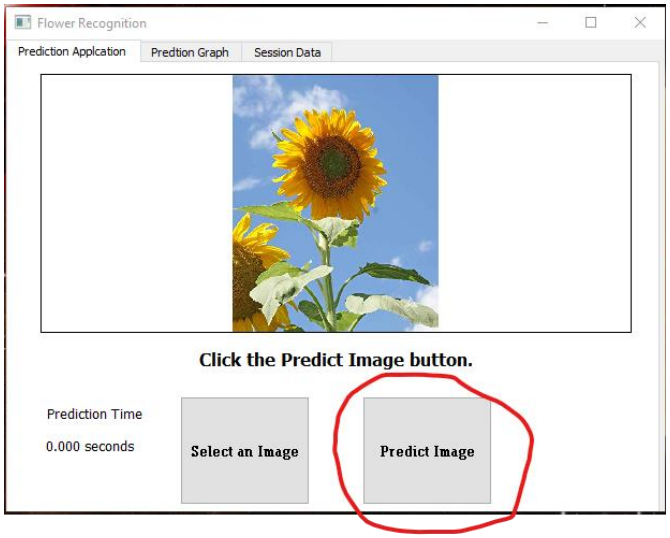
Interactive queries

Users are able to click a button that opens a file explorer (The select image button).

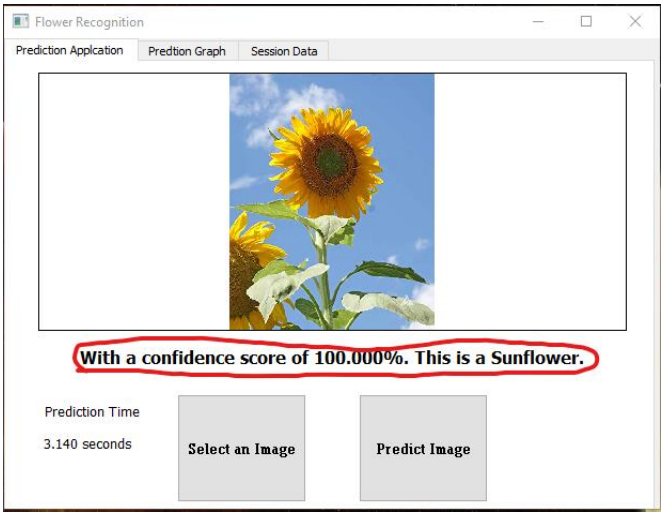


This file explorer only sees image files and folders (here we select the sunflower).

This image is placed on the GUI and the predict image button is now enabled and able to be pressed.



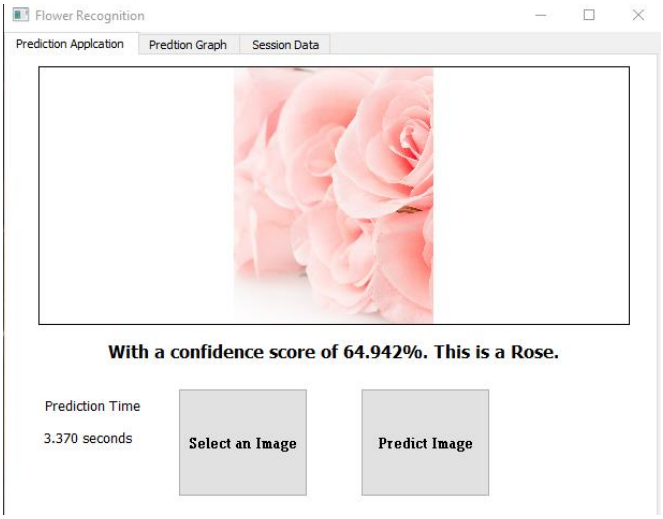
Once click the flower recognition program using the model created from the DenseNet algorithm is used to make a prediction. The user is shown the confidence score and the guess of the type of flower that is in the image.

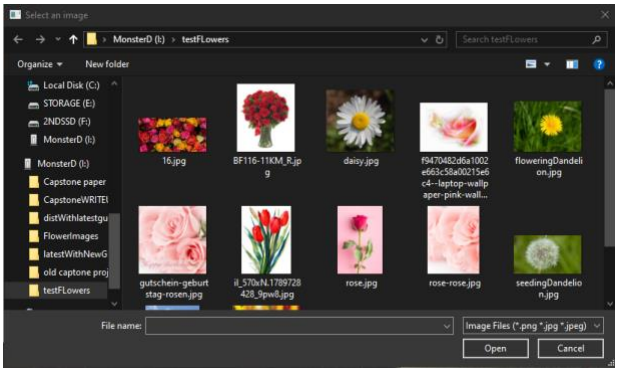


Dashboard

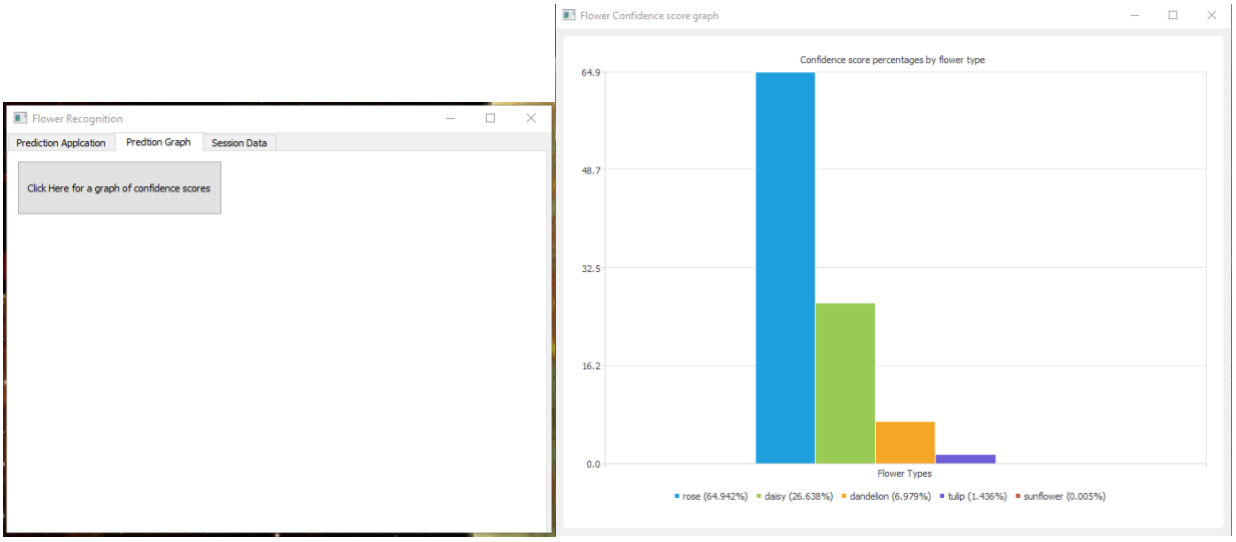
The GUI for the user application is a user-friendly and functional dashboard. The program has several visualizations. The opening window has three tabs at the top of the program. The first tab is the first tab the user sees.

On the main tab, the user has two buttons a select image button and a predict image button. The select image button opens up a file explorer to select the image of a flower to be predicted. The second button is to run the prediction algorithm on the selected image. The main tab has three visualizations. The first being the data (image) the user selected being display. The second being the confidence score and what the program guess of the flower type. The third is the prediction time it took the computer to make its guess. The time to guess is based on the hardware the program is on. The image below is of the first tab and file explorer.





The second tab has a button to show the fourth visualization. The fourth visualization is a bar graph that is shown when the button in the second tab is clicked. The bar graph shows how confident it is the user's image is a type of flower. In this case, the program is 64.942% confident that this flower is a rose, 26.638% confident that it's a daisy, 6.979% confident this it is a dandelion, 1.436% confident it is a tulip, and 0.005% confident it is a sunflower. The graph is updated after each flower prediction.



The last tab shows the current session data and the fifth visualization. It shows the number of predictions made in the session so far and of the predictions of how many guesses were of each type of flower.