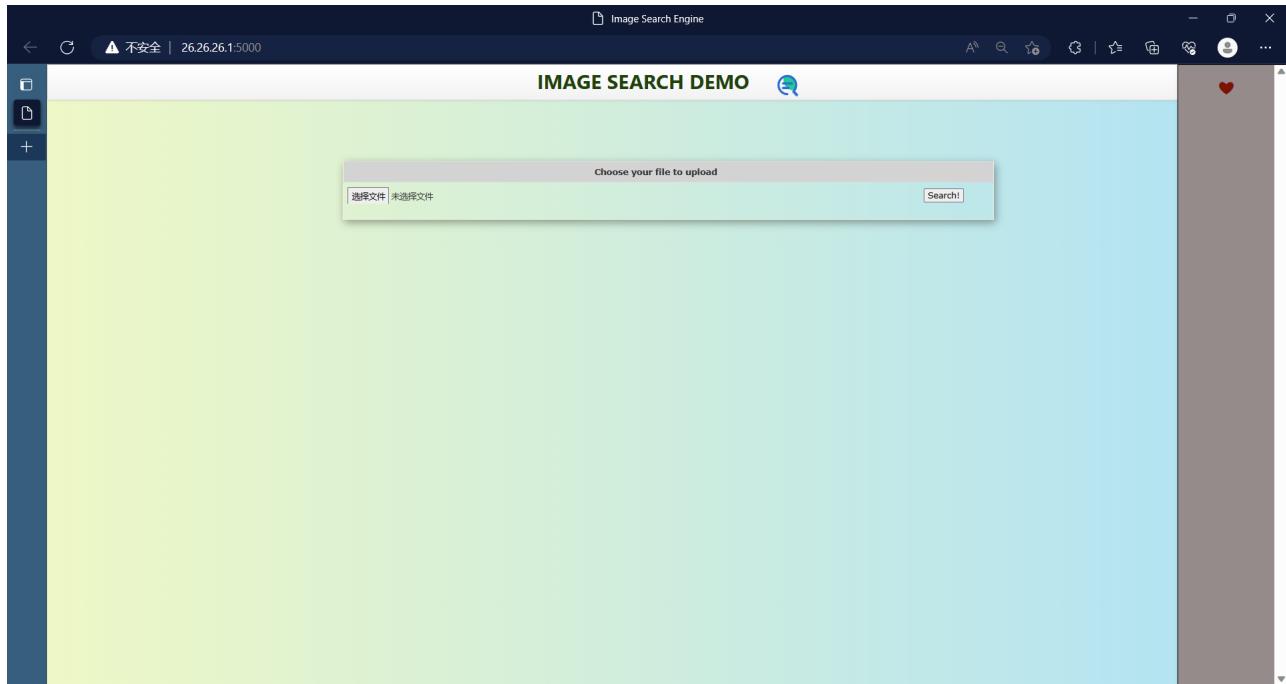
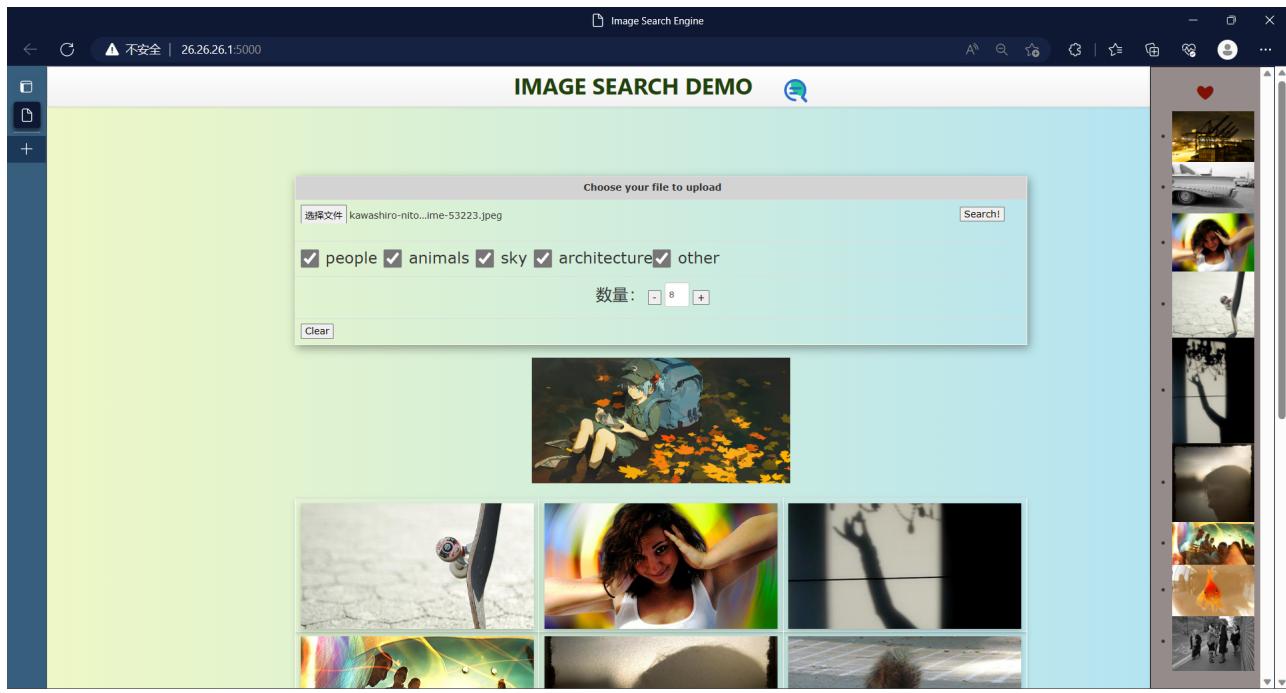


Information Retrieval

Introduction

1. General preview





2. Background

This is one homework in Tongji's HCI course, aiming to build an information retrieval engine. And it was completed by 2152831 陈峥海 independently.

Environment

compiler: python 3.11

packages: Flask PyQt5 numpy tensorflow Flask-HTTPAuth scipy imageio matplotlib sklearn

editor: Visual Studio Code

programming language: html(css, javascript), python

File tree

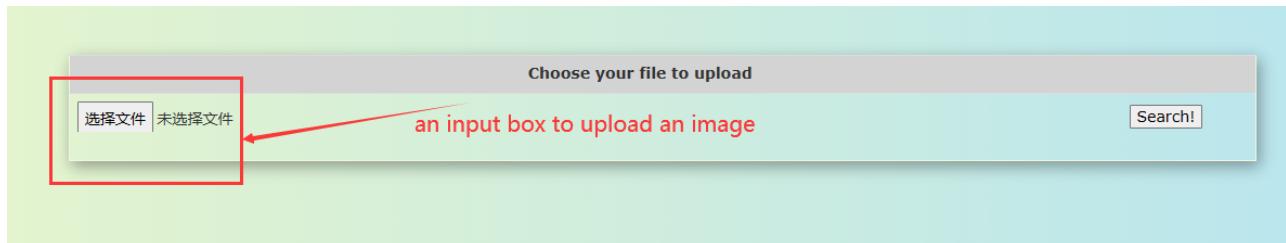
```
|-database
|   |-dataset
|   |-tags
|-imagenet
```

```
├──images  
├──static  
│   ├──images  
│   └──result  
├──templates  
└──uploads  
└──_pycache_
```

Five stages

1. Formulation

It contains an input box to upload an image.



We can upload the image through this button

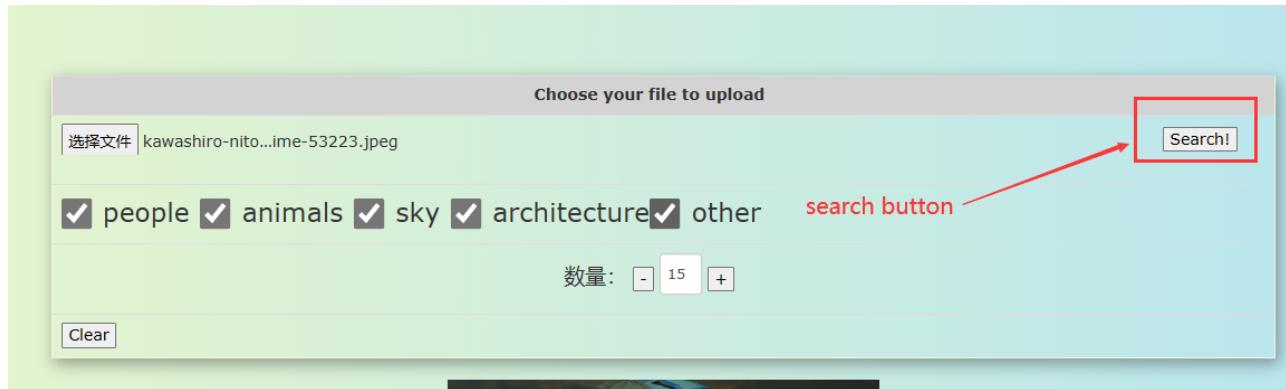
Users can preview the query image in the searching window



For the uploaded file, I display it below the search box

2. Initiation

It has a search button



Start running image retrieval with the search button.

3. Review

Provide an overview of the results (e.g. the total number of results)

Choose your file to upload

选择文件 kawashiro-nito...ime-53223.jpeg

Search!

people animals sky architecture other

数量: 8

Clear

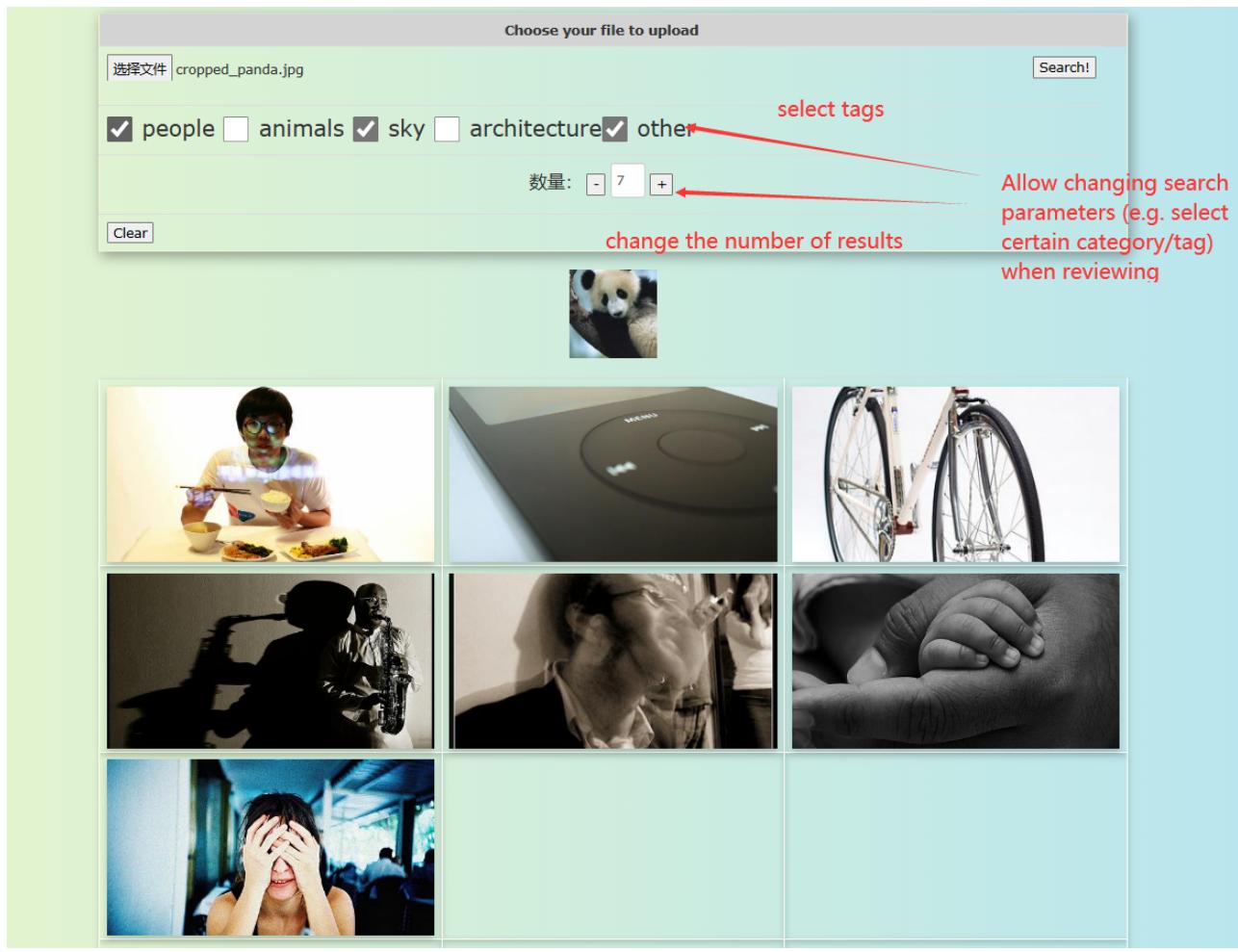
overview of results

The screenshot shows a user interface for image search. At the top, there's a file upload section with a placeholder 'Choose your file to upload' and a 'Search!' button. Below it, a list of selected categories includes 'people', 'animals', 'sky', 'architecture', and 'other', each preceded by a checked checkbox. A '数量:' (Quantity) field is set to '8', with minus and plus buttons for adjustment. A 'Clear' button is also present. Below this, a large image thumbnail shows a person sitting outdoors. To the right of this main image, a red arrow points to the text 'overview of results'. The main area displays a grid of nine smaller image thumbnails. The first row contains three images: a woman standing in front of a chalkboard, a night view of a port or industrial area with cranes, and a side view of a classic car. The second row contains three images: a street scene with buildings, a close-up of purple flowers, and a dramatic sunset or sunrise with a silhouette of a figure. The third row contains two visible images: a person leaning forward and a desk setup with a computer monitor and various items. The last cell in the grid is empty.

After searching, the results can be previewed in real time below.

4. Refinement

Allow changing search parameters (e.g. select certain category/tag) when reviewing results



By modifying the tags, we can limit the scope of the image and make the result more predictable. At the same time, we can set the number of photos.

5. Use

Users can take some actions, e.g. add selected images to a favorite list

IMAGE SEARCH DEMO



Choose your file to upload

选择文件 kawashiro-nito...ime-53223.jpeg

people animals sky architecture other

数量: 14



add the picture to favorite



CH DEMO



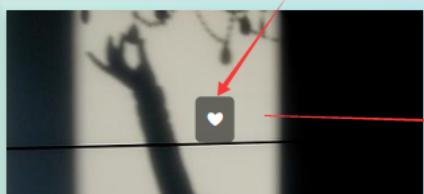
file to upload

people animals sky architecture other

14



click again to remove from favorite list.



When the mouse passes over the image, a heart icon will appear on the photo (the default status is gray). When I press the Love button, the image will be added to the right sidebar. You can also click on the Love here to make it gray and remove it from the sidebar.