Image collection expander

**State of the art**

Image collection expander is an application which allows users to manage their image collections and increase them based on different criteria. A user can upload their photos and add some information, like tags, content, context and location. Based on this data, the application can classify them and find some related new media files. The user will have the possibility to add the resulted images to his own collection or to share them on other platforms.

# What did the others do?

## Instagram

Instagram is an online website and also mobile application used for photo-sharing, video-sharing and social networking. The users can upload images and videos, set their privacy, classify them with tags, see the uploads of other users or for a certain tag and they also can chat to each other. Instagram was created by Kevin System and Mike Krieger, launched in 2010 as a free mobile application and it gained popularity very fast, reaching 100 million active users in about one year.

Similar to “Image collection expander”, Instagram is an image-based application which gives the opportunity to share and expand image collections, classify and search images by certain characteristics.

## Getty Images

**Getty Images** is an American stock photo agency, supplier of stock images for business and consumers with an archive of **80 million still images and illustrations** and **more than 50,000 hours of stock film footage**. It targets three markets—creative professionals (advertising and graphic design), the media (print and online publishing), and corporate (in-house design, marketing and communication departments).

As Getty has acquired other older photo agencies and archives, they have digitized their collections, enabling online distribution. Getty Images now operates a large commercial website: <http://www.gettyimages.com> which allows clients to search and browse for images, purchase usage rights and download images. Costs of images vary according to the chosen resolution and type of rights associated with each image.

From Getty Images official Facebook account: “We offer the industry's best and broadest collections of imagery and footage - including award-winning news, sport and entertainment content, plus rare and contemporary archival imagery. Our music collection provides a wide range of pre-cleared tracks from independent artists, chart-topping acts and popular soundtracks.”

Getty Images offers multiple services:  cloud-based [digital asset management](http://mediamanager.gettyimages.com/us/), management of [global media distribution](https://www.image.net/xads/actions/login.do?CSRFToken=null) of content from an event or product launch with image.net, securing the rights for any use with their [research, rights and clearance](http://www.gettyimages.com/gi-resources/Files/PDF/LicensingServices/Licensing_Services_en.pdf) team, a person hired by them can help you with all your [photography, videography and production services](http://www.gettyimages.com/resources/assignments) you need. They also have created some [mobile apps](http://www.gettyimages.com/resources/ipad) which provide on-the-go access to their entire photo library and project collaboration tools. They also claim to own “The world's most powerful imagery”.

## TinEye

TinEye is an image search and recognition company whose mission is to make images searchable, by delivering image search and recognition solutions. The TinEye API allows automation of search for images against their own multibillion index of web images. It is used in order to find out where an image came from, how it is being used or if modified versions of the image exist. TinEye API has a REST/JSON interface through which can be accessed via pre-paid search bundles starting from $200.

# Resources and tools available

## Flickr API

Flickr is a website used for organizing, uploading, editing and sharing images and videos and it was created by Ludicorp in 2004 and acquired by Yahoo in 2005. It is like an online community, where you can find images based on tags. The application hosts more than 6 billion media resources and over 87 million registered members, who upload more than 3.5 million new photos daily.

It provides an API that lets users to get data from the website, in order to access and use it in other applications. The API has several endpoints, being well structured and easy to use. Therefore, “Image collection expander” will use flickr.photos.search as main endpoint, for searching related images by tags, by the content type (photos or screenshots), by their context (indoor or outdoor) or by the time the media resources were taken. Besides this endpoint, the application will use others endpoints like flickr.photos.geo.photosForLocation, which will allow finding photos by geographical coordinates, specifying the latitude and the longitude, but also an accuracy.

## Getty Images API

Getty Images has a very friendly API available for use, after obtaining a API key. In this webpage you can find a “Getting started” guide for using this API:

<http://developers.gettyimages.com/en/getting-started.html>.

They even have an interactive tool so you can find out faster how the API works, before trying to make calls from your own application and a “Quick start”:

<http://developers.gettyimages.com/api/docs/v3/quickstart.html> .

In our application, we will probably use mostly the following APIs:

The search API [http://developers.gettyimages.com/api/docs/v3/search/](http://developers.gettyimages.com/api/docs/v3/search/%20), the following methods:

* **/search/images** -> search for both creative and editorial images
* **/search/images/creative** -> Search for creative images
* **/search/images/editorial** -> search for editorial images

The images API <http://developers.gettyimages.com/api/docs/v3/images/>, the following methods:

* **/images/id** -> Get metadata for a single image by supplying one image id
* **/images/id/similar** -> Search for images similar to an image

The download API: <http://developers.gettyimages.com/api/docs/v3/downloads/>, the following method:

* **POST /downloads/images/id** -> Download an image

Getty Images also provides SDKs for C#, Node.js, PHP. We might use the SDK for C#.

## Google APIs

The JSON/Atom Custom Search API offers the possibility to retrieve and display search results from Google Custom Search programmatically. With this API, you can use RESTful requests to get either web search or image search results in JSON or Atom format. In order to use the API, we need to create an API key from google developer console, obtaining in the end a call to the endpoint similar to the following:

https://www.googleapis.com/customsearch/v1?key=INSERT\_YOUR\_API\_KEY&cx=017576662512468239146:omuauf\_lfve&q=WordToSearch

We can also use Google’s reverse image search service, by calling the endpoint below and parse the results

https://www.google.com/searchbyimage?site=search&sa=X&image\_url=YOUR\_IMAGE\_URL

## Meta Reverse Image Search API

MRISA (Meta Reverse Image Search API) is a RESTful API which takes an image’s URL, does a reverse image search and returns a JSON array with standard search information such as title, description, destination URL and the total number of search results. MRISA currently uses the google reverse image search.

# Relevant links

* <https://www.flickr.com/services/api/>
* <https://www.flickr.com/about/>
* <https://www.instagram.com/about/us/>
* <https://services.tineye.com>
* <https://github.com/vivithemage/mrisa>