

IMAGE SEARCH

BASIC IMAGE SEARCH

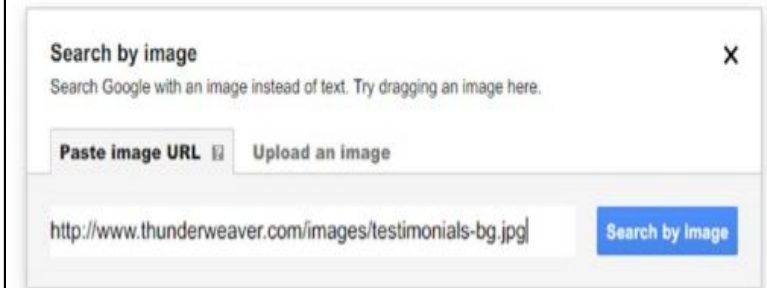
- ✓ **Digital images, logos, and icons** can be of great value in OSINT investigations.
- ✓ Major search engines like **Google, Yahoo, and Bing** provide **basic image search engine functionality**. However, there are more specialized image search engines that can be used to get more precise results:-
- ✓ The following sites offer image search services:-
 - ✓ Google Image Search (<https://images.google.com>)
 - ✓ Bing image search (www.bing.com/images)
 - ✓ Yahoo Images (<http://images.yahoo.com>)
 - ✓ Yandex (<https://yandex.com/images>)
 - ✓ Baidu (<http://image.baidu.com>)
 - ✓ Imgur (<https://imgur.com>)
 - ✓ Photobucket (<http://photobucket.com>)
 - ✓ Picsearch (www.picsearch.com contains)
 - ✓ <https://ccsearch.creativecommons.org>
 - ✓ SmugMug (<https://www.smugmug.com>)
- ✓ Google offers **Advanced Image Search**, where you can set many criteria of your search query such as **image color, image type** (photo, face, clip art, line drawing, animated), **region or country, site or domain** name, image format type, and usage rights.
- ✓ Google Advanced Image Search can be found at (https://images.google.com/advanced_image_search).

- ✓ **Images shared across social media sites can be found** in the following locations:-
 - ✓ Lakako (<https://www.lakako.com>): This **searches Instagram, Twitter, and Google+ for photos and people.**
 - ✓ Flickr (<https://www.flickr.com>)
 - ✓ Flickr map (<https://www.flickr.com/map>): **View uploaded images on a map according to the uploader country of origin.**
 - ✓ My Pics map (www.mypicsmap.com): **View Flickr photos on a Google map.** You need to supply the **Flickr username of the image uploader** or view photos from a specific photo set.
 - ✓ idGettr (<https://www.webpagefx.com/tools/idgettr>): Find the **Flickr ID number** (also works for groups).
 - ✓ Flickr Hive Mind (<http://flickrhivemind.net>): This is a **datamining tool for the Flickr database of photography.**
 - ✓ Instagram (<https://www.instagram.com>)
 - ✓ Websta (<https://websta.me/search>) is an **advanced search for the Instagram website.**
 - ✓ Stalkture (<http://stalkture.com>) is an Instagram **online web viewer.**
 - ✓ Mininsta (<http://mininsta.net>) is an **advanced Instagram search engine.**
 - ✓ Pinterest (<https://www.pinterest.com>)

- ✓ There are specialized sites that hold **images that have appeared in the press and news media.**
- ✓ To search for this type of images, try these sites:-
 - ✓ Gettyimages (www.gettyimages.com)
 - ✓ International Logo List (<http://logos.itl.gr/table/>)
 - ✓ Instant Logo Search (<http://instantlogosearch.com>)
 - ✓ Reuters Pictures (<http://pictures.reuters.com>)
 - ✓ News Press (<https://www.news-press.com/media/latest/news>)
 - ✓ Associated Press Images Portal (www.apimages.com)
 - ✓ PA Images (<https://www.paimages.co.uk>)
 - ✓ European Pressphoto Agency (www.epa.eu)
 - ✓ Canadian Press Images Archive
(www.cpimages.com/fotoweb/index.fwx)

REVERSE IMAGE SEARCH

- ✓ A reverse image search **uses a sample image instead of a search query.**
- ✓ It works by **uploading an image—or inserting its URL—**into a reverse image search engine, which will in **turn search its index to find where else this image appears online and display all the other locations.**
- ✓ In this way, you can **know the original source of photographs, memes, and profile pictures.**
- ✓ The following are the most popular reverse image search engine sites:-
 - ✓ Google reverse search (<https://www.google.com/imghp>): Google has a **dedicated search engine for image reverse searches**; you can either paste the image URL in the search box or upload it to Google (see Figure on the right).
 - ✓ Karmadecay (<http://karmadecay.com>): This is a **reverse image search on Reddit.com** (in beta).
 - ✓ TinyEye (www.tineye.com): You can **search by image or URL**; more than 24 billion images have already been indexed.
 - ✓ Reverse Image Search (www.reverse-image-search.com): Conduct a **reverse image search with Google, Bing, and Yandex.**
 - ✓ Imagebrief (www.imagebrief.com): Search for images and **use reverse image searches as well.**



- ✓ Cam Finds App (<http://camfindapp.com>): This is an **app available for both Android and Apple devices**. It uses visual search technology to recognize uploaded pictures and gives instant results about them such as related images, local shopping results, and a vast selection of web results.
- ✓ Image Identification Project (<https://www.imageidentify.com>): This **uses visual search technology to recognize uploaded images.**

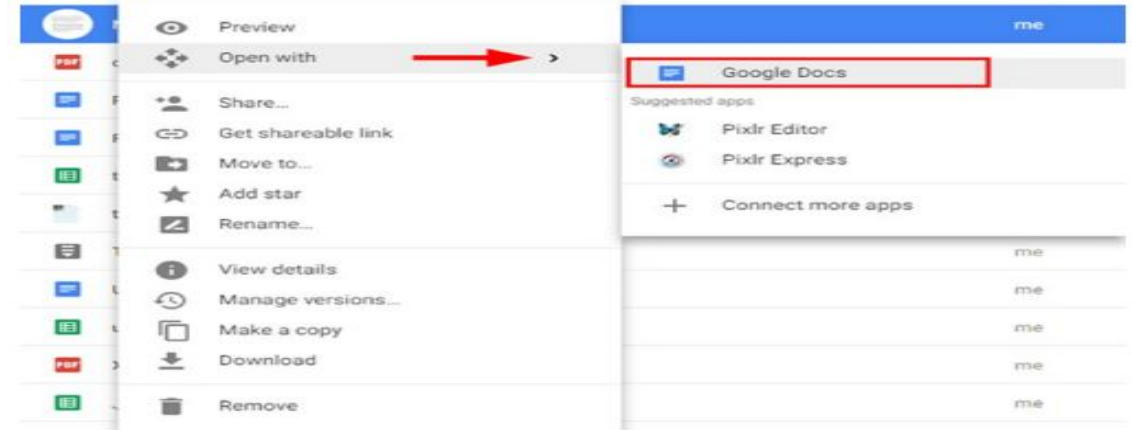
IMAGE MANIPULATION

- ✓ Check OSINT multimedia searches **intersect many areas of the digital forensics field.**
- ✓ If there is a doubt about any multimedia file (image or video), you should **check carefully to assure that it has not been tampered with**, meaning manipulated on purpose to **hide or alter some facts.**
- ✓ Image analysis **begins with identifying the source device** (camera or mobile phone) used to take the photo. This information is part of image metadata.
- ✓ We will continue here and mention additional tools that are specifically useful for digital images:-
 - ✓ Forensically (<https://29a.ch/photo-forensics/#forensicmagnifier>):-
 - ✓ This site offers **free tools for image forensics analysis**; it includes **clone detection, error-level analysis, metadata extraction**, and more.
 - ✓ Fotoforensics (<http://fotoforensics.com>): This offers the **forensics analysis of JPEG and PNG files** to check for any manipulation using **error-level analysis (ELA) techniques.**
 - ✓ Ghiro (www.getghiro.org): This is an open source tool that can **analyze images in bulk and extract metadata information**, use **GPS metadata to search for nearby images**, and perform **ELA to detect whether an image has been manipulated.** You can download this program as a virtual appliance that is ready to use (it comes **installed within Linux Ubuntu**).

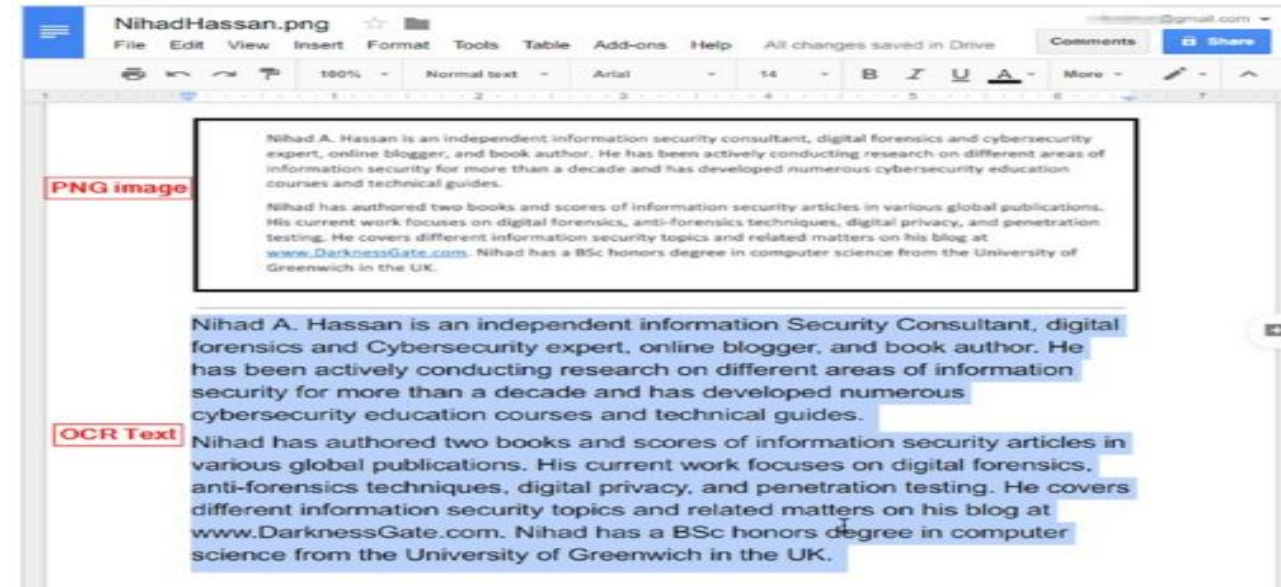
- ✓ ExifTool (<https://sno.phy.queensu.ca/~phil/exiftool>): You can **read, write, and edit meta-information** in a wide variety of files. It supports different metadata formats such as EXIF, GPS, IPTC, XMP, JFIF, GeoTIFF, ICC Profile, Photoshop IRB, FlashPix, AFCP, and ID3.
- ✓ Exif Search (<https://www.exif-search.com>): This is a **commercial search of images by using their metadata**.
- ✓ JPEGsnoop (www.impulseadventure.com/photo/jpeg-snoop.html): This analyzes the **source of the image to test its authenticity**.
- ✓ GeoSetter (www.geosetter.de/en): You can manipulate/view geodata—and other metadata information—of other images.
- ✓ Lets Enhance (<https://letsenhance.io>): You can **enhance a photo size without losing its quality**. The **free account allows for 14 images**. However, you still need to **upload a target image to the server**, and this will impose privacy concerns on the uploaded files.

OCR TOOLS

- ✓ During your search, you may encounter **text written inside images**. This text should be **extracted first so that it can be edited, formatted, indexed, searched, or translated**.
- ✓ The following are popular tools and web services for extracting text from images, known as optical character recognition (OCR):-
 - ✓ FreeOCR (www.paperfile.net/index.html)
 - ✓ Free Online OCR (www.i2ocr.com)
 - ✓ NewOCR (www.newocr.com)
 - ✓ Google Docs have integrated OCR support enabled by default. To use this service, you need to upload the image into your Google Drive account (you must have a Google account first) at <https://www.google.com/drive>.
 - ✓ Then right-click the uploaded image, select Open With, and choose Google Docs (see Figure on right).
 - ✓ You will notice that Google has presented your uploaded image on the top of the document and created an editable OCR text below it (see Figure on right).



Opening an image file using Google Doc



Google Doc changed the text within the uploaded image into editable text