



# Day 5 — Image & Metadata Analysis (EXIF & Reverse Image)

## Goal

- Extract metadata (EXIF) from images.
  - Remove metadata to protect privacy.
  - Reverse-search images to find duplicates online.
  - Check for signs of editing using FotoForensics.
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## 1 Tools Required

Tool / Service	Purpose	Download / Access
ExifTool	Extract and remove image metadata	ExifTool Windows
Google Images	Reverse image search	Google Images
TinEye	Reverse image search	TinEye
FotoForensics	Detect image editing (ELA)	FotoForensics

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## 2 Folder Setup (ss folder)

Folder location:

C:\Users\Nidhi\Downloads\ss folder

Contents of folder:

1. Original images you want to test (example: myphoto.jpg, photo2.png).

2. **ExifTool executable + support files:**

- `exiftool.exe`
- `exiftool_files` folder (contains DLLs required by ExifTool).

3. Both must be in the same folder for ExifTool to work.

4. Optional: **Cleaned images** (after metadata removal).

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## 3 Commands for ExifTool

### A. Check metadata

```
.\exiftool.exe myphoto.jpg
```

- Shows camera model, GPS, timestamp, software, etc.
- Output can be saved to a file:

```
.\exiftool.exe myphoto.jpg > myphoto_exif.txt
```

```
PS C:\Users\Nidhi          -> .\exiftool.exe myphoto.jpeg
ExifTool Version Number   : 13.37
File Name                : myphoto.jpeg
Directory               : .
File Size                : 7.7 kB
Zone Identifier          : Exists
File Modification Date/Time: 2025:09:30 12:40:27+05:30
File Access Date/Time    : 2025:09:30 12:40:58+05:30
File Creation Date/Time  : 2025:09:30 12:40:25+05:30
File Permissions          : -rw-rw-rw-
File Type                : JPEG
File Type Extension      : jpg
MIME Type                : image/jpeg
JFIF Version             : 1.01
Resolution Unit          : None
X Resolution             : 1
Y Resolution             : 1
Image Width              : 275
Image Height              : 183
Encoding Process          : Baseline DCT, Huffman coding
Bits Per Sample           : 8
Color Components          : 3
YCbCr Sub Sampling       : YCbCr4:2:0 (2 2)
Image Size                : 275x183
Megapixels                : 0.050
```

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## B. Remove all metadata (create cleaned version)

```
.\exiftool.exe -all= -o cleaned.jpg myphoto.jpg
```

- `-all=` → remove all EXIF metadata
- `-o cleaned.jpg` → save as a new file, original untouched
- Confirm metadata removal:

```
.\exiftool.exe cleaned.jpg  
PS C:\Users\Nidhi  
1 image files created  
nshots> .\exiftool.exe -all= myphoto.jpeg -o cleaned.jpeg
```

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## C. Optional: Remove metadata from multiple images

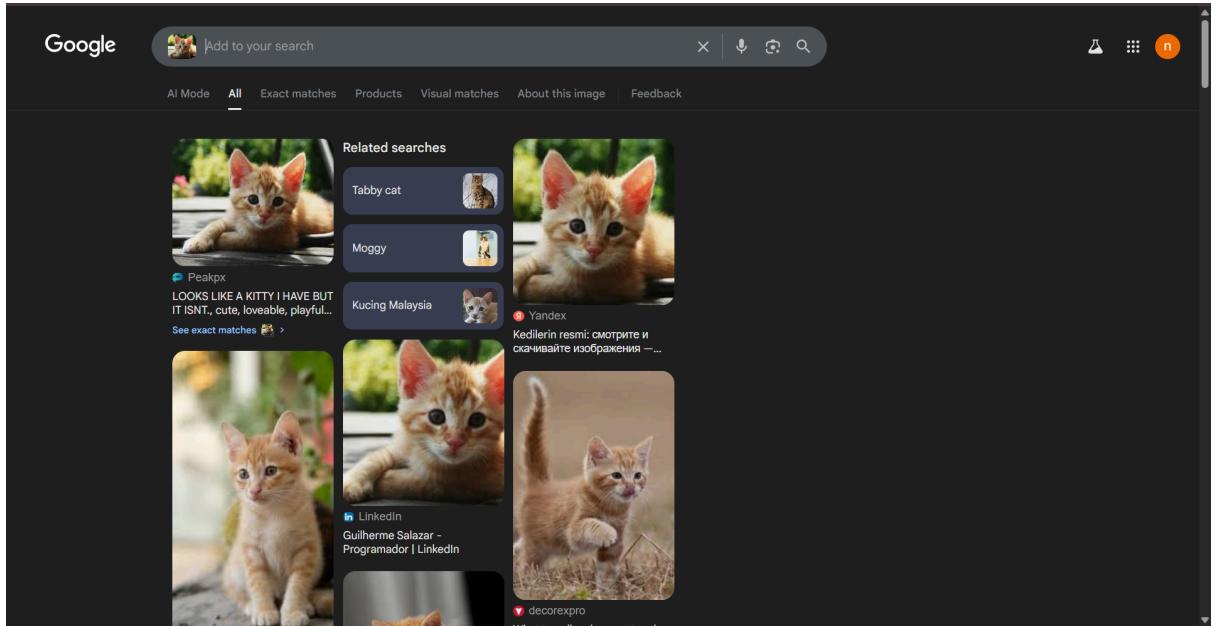
```
.\exiftool.exe -all= -overwrite_original *.jpg
```

- Removes EXIF from all JPG images in folder.
  - Use only if you don't need the originals.
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## 4 Reverse Image Search

### A. Google Images

1. Go to Google Images.
2. Click **camera icon** → Upload image (`myphoto.jpg` or `cleaned.jpg`).
3. Check where the image appears online and note results.



## B. TinEye

1. Go to TinEye.
2. Upload your image.
3. Record websites, duplicates, and reposts.

**Tip:** Reverse-search usually doesn't change with metadata removal.

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## 5 FotoForensics (ELA — Error Level Analysis)

1. Go to FotoForensics.
2. Upload an image.
3. Observe the ELA map:
  - Uniform compression → likely unedited
  - High contrast in areas → possible editing
4. Save screenshots of ELA results.

fotoforensics.com

Bookmarks All Bookmarks

# FotoForensics

Submit a picture for Forensic Analysis

Image URL:  Upload URL

OR

Upload File: Choose File cleaned.jpeg Upload File

See the [FAQ](#) for [submission guidelines](#). See the [tutorials](#) for analysis instructions.

Unique images: 8,267,217  
Banned users: 10,578  
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# FotoForensics

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