Intro to OSINT: arcane Geoguessr techniques to learn everything about everything

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UtahSec

So what’s OSINT?

- **O**pen **S**ource **INT**elligence *(hence the name)*
- is the practice of gathering public, open-source information.

Outline

1. Introduction
2. Metadata and EXIF
   - Applications of Metadata
   - Filesystem Metadata
3. Google Dorking
   - Vulnerable Webservices
4. Shodan and Mass Scanning
   - Shodan Filtering
   - Conclusion

What and Where is Metadata

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- We can roughly divide metadata between that which exists *inside* a file and *outside a file*
- We are going to look at EXIF, an internal metadata container for images, and filesystem attributes, which are stored externally.

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- Photos taken on cameras and some phones store the settings in which they were taken to make editing easier.
- Common tags include ISO/aperture, camera model, the date photo was taken, and location of photo (!)
- Because this data is *inside* the file, it will be retained when transferring them.

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- The default image viewer on your computer probably also has an EXIF viewer in the properties view.
- *it's also very visible at the beginning of the file in a hex editor*■

Practical Demonstration

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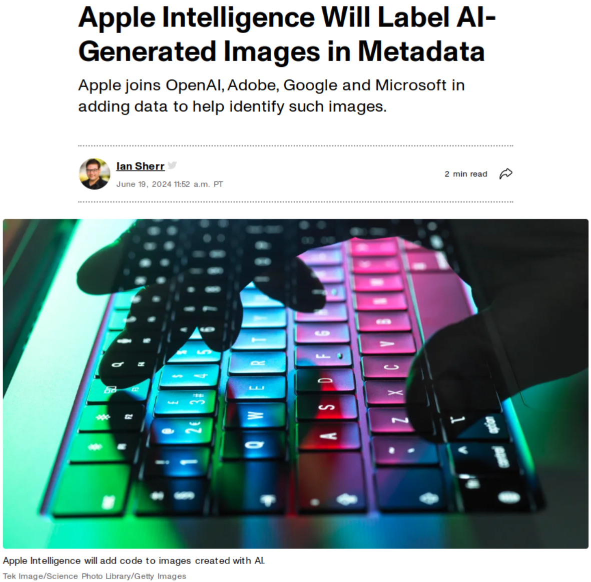
- Most social media sites strip EXIF in the compression step when uploading images.
- But what about personal sites for people unaware of metadata stripping? ■

Apple's AI Tagging



Apple Intelligence Will Label AI-Generated Images in Metadata

Apple joins OpenAI, Adobe, Google and Microsoft in adding data to help identify such images.

Ian Sherr

June 19, 2024 11:52 a.m. PT

2 min read

Apple Intelligence will add code to images created with AI.

Tek Image/Science Photo Library/Getty Images

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- Most filesystems allow users to specify arbitrary file attributes. Perhaps author, or file format version, or character encoding.
- This information is stored within the filesystem, and cannot be extracted from the data inside a file.

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- On MacOS and other Unix-likes: ■
- `touch -a -m -t 202409110130.01 Foobar.pdf`
- Windows (should be something like):
- `set metadata [<drive>:][<path>]<metadata.cab>`

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Vulnerable Webservices

4 Shodan and Mass Scanning

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- Search engines support advanced filters like `site=`, `type=`, `inurl=`, etc. They can find specific types of data or specified patterns within them.
- It turns out that misconfigured or underconfigured websites share common patterns between them...that are indexed by Google>:)

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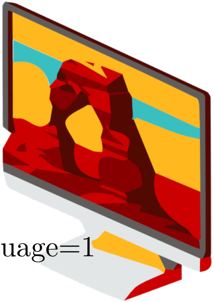

- *list in case I get barraged by CAPTCHAs:*
- http://61.211.241.239/CgiStart?page=Single&Mode=Motion&Language=1
- http://194.94.76.134/control/userimage.html

Manual Banner Scraping

- Last time we talked about banners, which describe information about the service running on a given port.

- Also, we can `whois` any given IP to see who it is registered to. For example, 204.79.197.200 ■
- **To gather information about a webserver, grabbing its banners is helpful.**

Manual Banner Scraping

- Last time we talked about banners, which describe information about the service running on a given port.
- We can `ping` the domain name to lookup its IP address and `nmap` it for any open ports
- Also, we can `whois` any given IP to see who it is registered to. For example, 204.79.197.200 ■
- **To gather information about a webserver, grabbing its banners is helpful.**

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- But it's difficult to scan the entire internet (or at least the IPv4 space)
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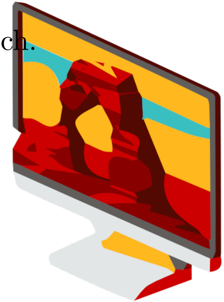
- So what do you do?
- **Shodan** is a massive banner repository for IoT and security research.



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- We can specifically look for mySQL databases with the filter `product:MySQL`
- `screenshot.label:ics`
- A major aim of Shodan is to index by vulnerability.
  If we searched for `vuln:ms17-010`, we would get websites vulnerable to the 2017 Eternal Blue exploit...

  But this feature isn't available without a business or academic account.

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Any questions?