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BRCC British Romanian Chamber of Commerce

ISACA Trust in, and value from, information systems Romania Chapter

(ISC)² CHAPTER ROMANIA

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ITCAMP

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ROTSA The Highway of Romanian Tech Startups

techcelerator

Geolocation

Simona David

Who am I?

Simona David

- I love CTFs
- Bounty
- You can find me on social media – but you will have to do your OSINT
- Security Researcher @Orange Services

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Why this topic?

- It’s fun
- I’m curious

- Fighting online propaganda, misinformation and fake news

Definition

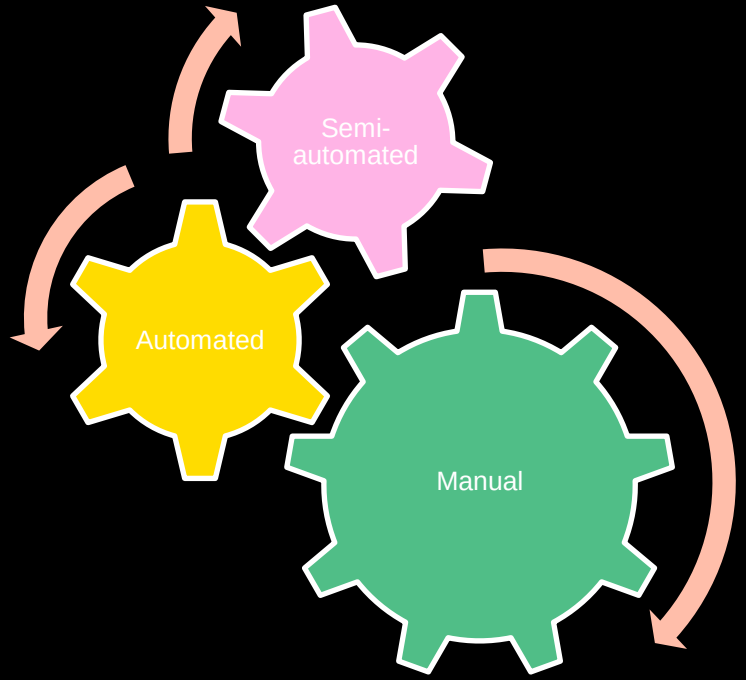
Geolocation is the identification of the real-world geographic location of an object.

Set of geographic coordinates:

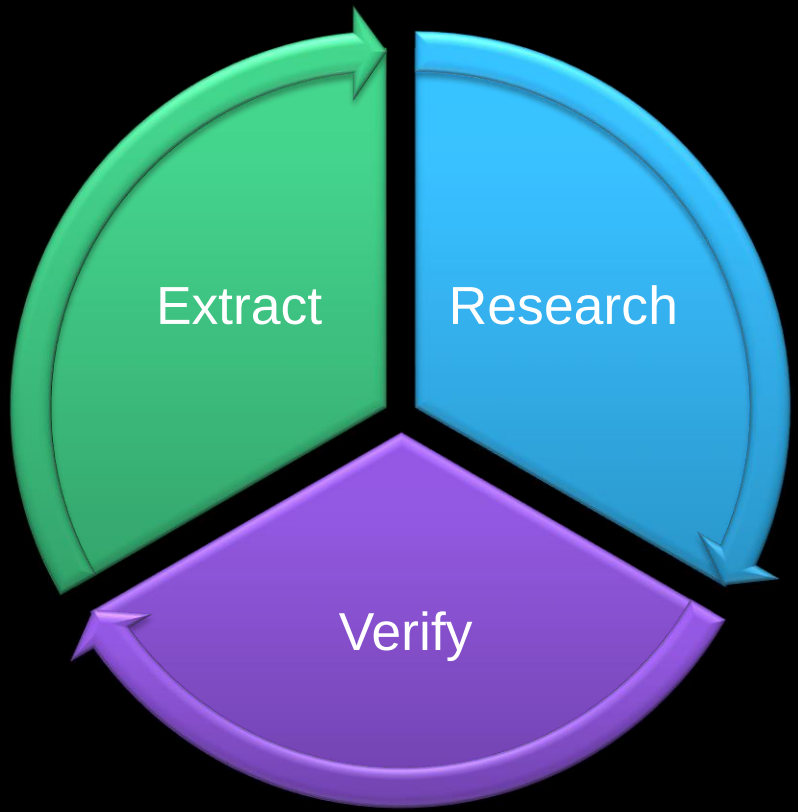
- Longitude
- Latitude

How?

- Manual
- Automated
- Semi-automated



Methodology



Metadata

Exchangeable Image File Format (EXIF)

- Standardised way of storing useful metadata in digital image files
- Fastest and easiest way to geolocate
- Usually it is stripped out of the picture

Example

Add a Caption

Saturday • 27 Jan 2024 • 11:58 Adjust

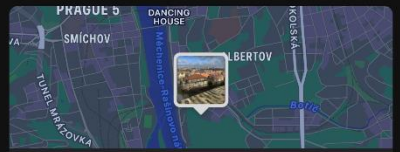
IMG_1464

Apple iPhone 13 HEIF

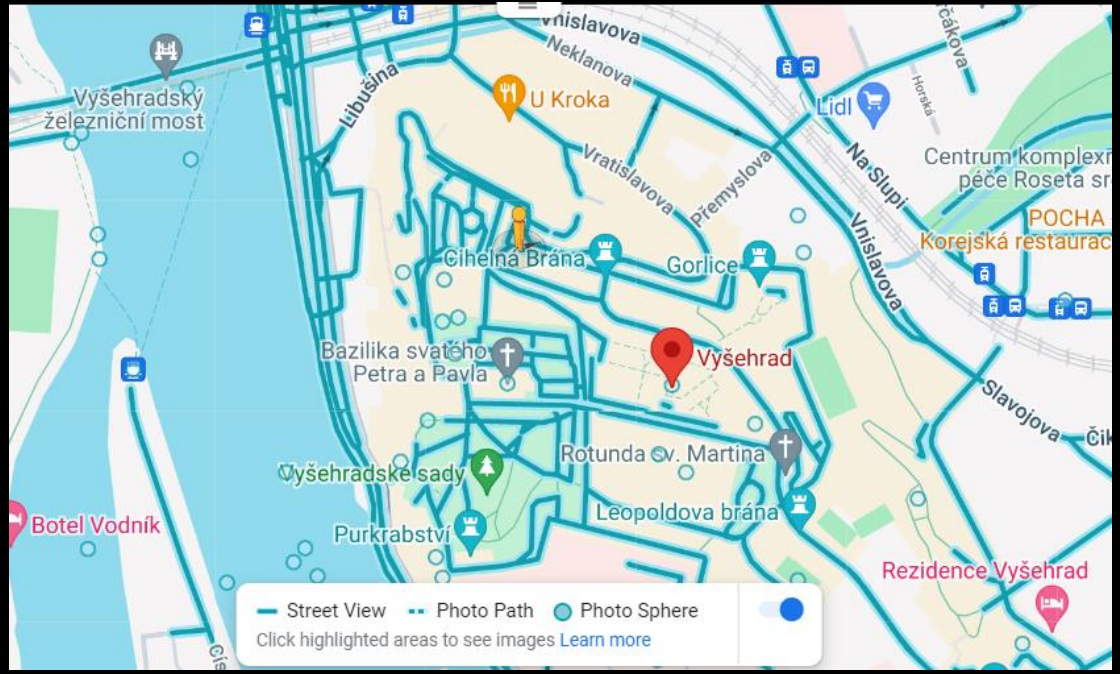
Wide Camera — 26 mm ƒ1.6

12 MP • 4032 × 3024 • 3,6 MB

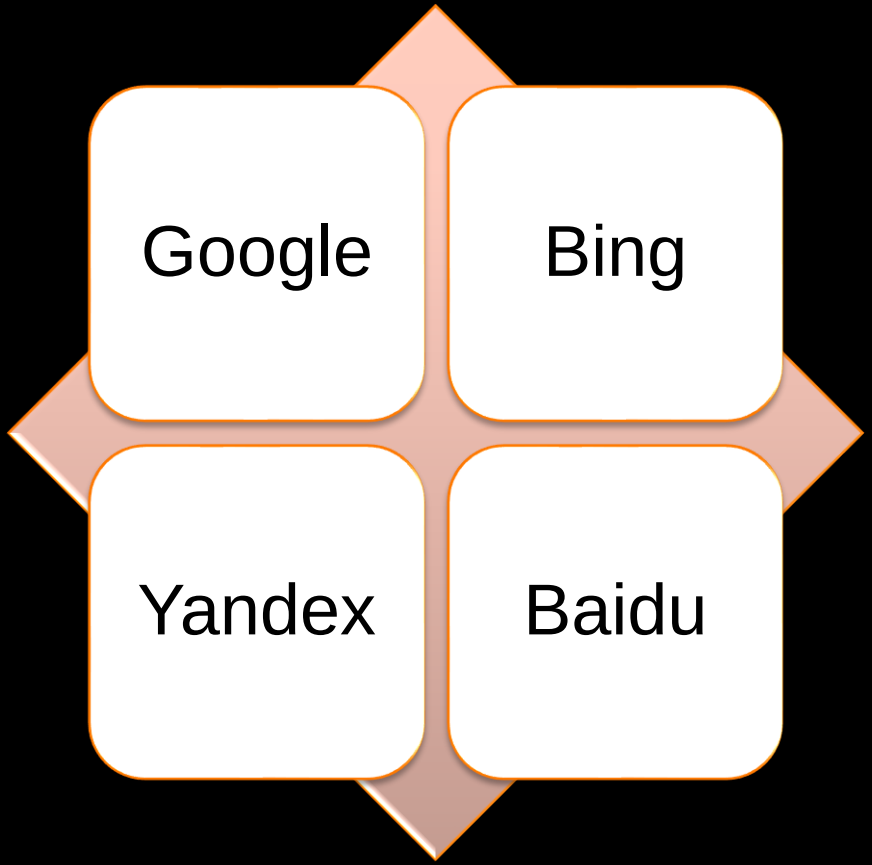
ISO 50 | 26 mm | 0 ev | ƒ1.6 | 1/1832 s



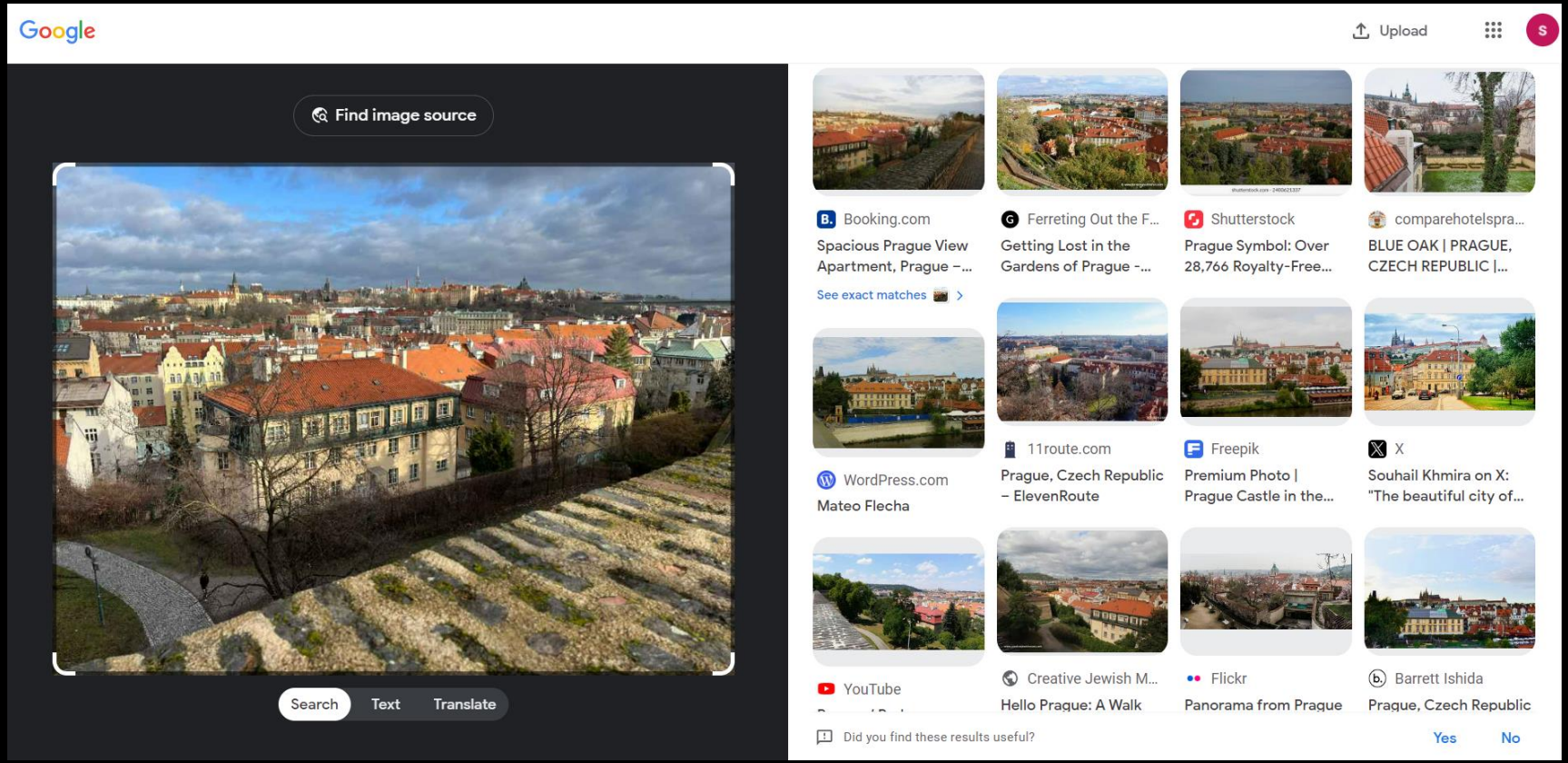
Vyšehrad Adjust



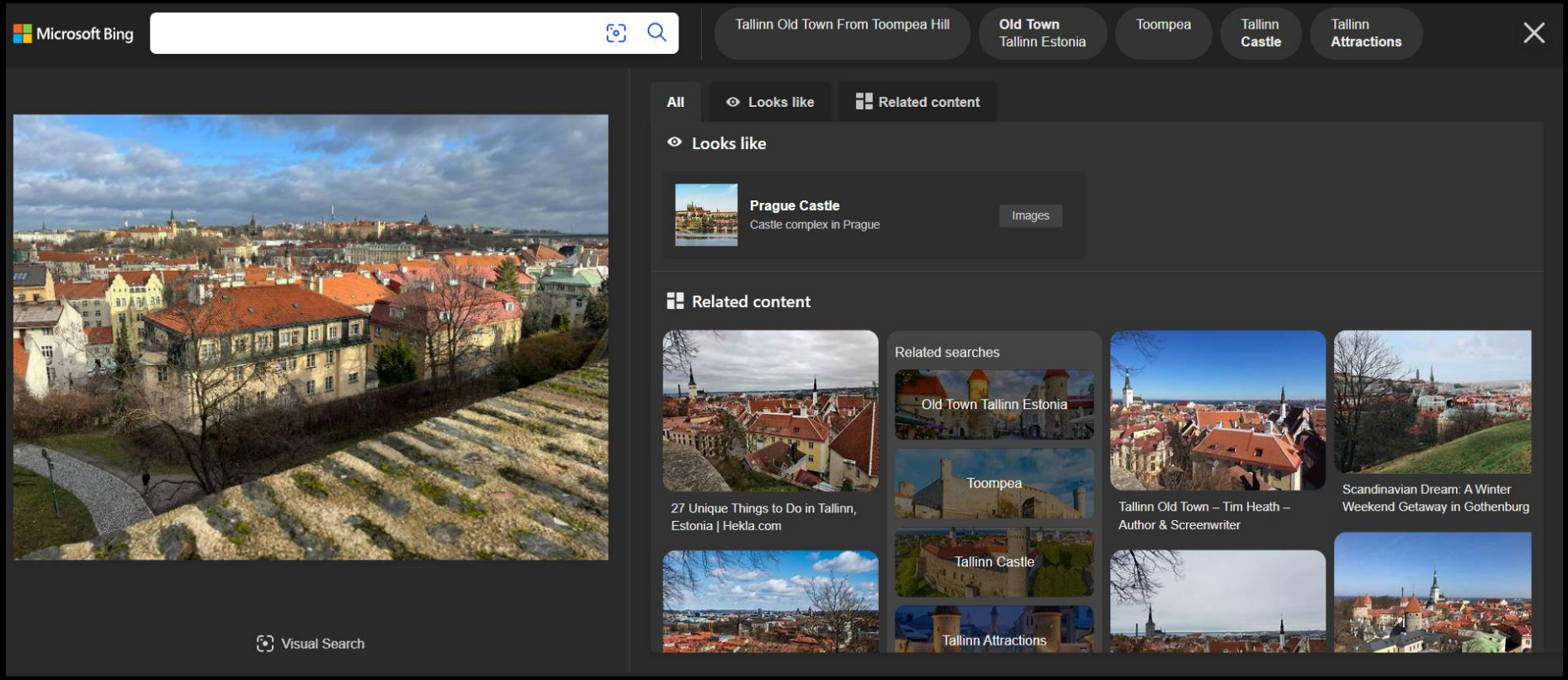
Reverse image search



Reverse image search



Reverse image search



Landmarks

Learn your landmarks!

There are a lot of duplicates and we should be able to identify the replicas.

Landmarks – The Eiffel Tower?

Landmarks – The Eiffel Tower?

Previous picture: Slobozia, Romania

This picture: Paris, France

Landmarks – Golden Gate Bridge?

Landmarks – Golden Gate Bridge?

Landmarks

The Leaning Tower of Pisa	Chicago, Illinois
Eiffel Tower	Las Vegas, Nevada Slobozia, Romania
Statue of Liberty	Visnes, Norway Odaiba, Japan
Parthenon	Nashville, Tennessee
Christ the King Statue	Lisbon, Portugal
Golden Gate Bridge	Lisbon, Portugal

Landmarks

Arc de triomphe	New York Bucharest, Romania Las Vegas, Nevada
Taj Mahal	Dubai, UAE Dhaka, Bangladesh
Mount Rushmore	Chongqing, China
Stonehenge	Natural Bridge, Virginia
Tower Bridge	Suzhou, China

Methodology

- Context
- Foreground
- Background

Split the image in small sections and extract info:

- Fixed (shops, hotels)
- Movable (license plates)

Example

aparcamientos
museo de Santa Cruz
catedral
alcázar
plaza de Zocodover
iglesia de Santiago Arrabal
CONO PIZZA

Remarks

- Language: Spanish
- Direction indicators with some landmarks?
- Restaurant advertisement
- Buildings with exposed brick facades
- Gloomy day, no sun shade

aparcamientos
museo de Santa Cruz
catedral
alcázar
plaza de Zocodover
iglesia de Santiago Arrabal
CONO PIZZA

Remarks

aparcamientos
museo de Santa Cruz
catedral
alcázar
plaza de Zocodover
iglesia de Santiago Arrabal

CONO
PIZZA
CONO PIZZA

Example

SECRET
FOREVER
CASINO
HIPPODROME CASINO
ELECTRONIC ROULETTE
HIPPODROME ROOFTOP BARS
Voted London's best steak house
BAGELS
TOTAL TAKEAWAY
Pizza slice

Remarks

- The subway indicators are specific to London
- Restaurants advertisement
- Buildings with exposed brick facades
- Looks like a shopping street, a bit crowded

SECRET
FOREVER
CASINO
ELECTRONIC ROULETTE
HIPPODROME CASINO
BAGELS
KEBABS & PIZZA
TO TAKE AWAY
CORNER
Pizza Slice

Remarks

CASINO
HIPPODROME CASINO
ELECTRONIC ROULETTE
ELECTRONIC ROULETTE
HIPPODROME
OOFTOP BARS

UNDERGROUND
LEICESTER

CORNER
to take away

Summary

Think twice when posting a photo on any social media platform!

Pay attention to details.

Find the exceptions.

Trust your intuition!

Resources

https://www.indicative.com/resource/geolocation/

https://www.canon-europe.com/pro/infobank/all-about-exif/

https://travelnoire.com/famous-landmark-replicas-around-the-world

https://www.thrillist.com/travel/nation/replicas-of-famous-landmarks-torre-eiffel-leaning-tower-of-niles-and-more

Questions?

Thank you!
orange™