



WHAT A MAR



Canva

WHAT PROBLEM ARE WE SOLVING?

Publishing pictures with
watermarks **is illegal**

Shutterstock, 123RF, and DepositPhotos

--> **Copyright Infringement** to use Watermarked photos

Students, bloggers, and even online advertisers

--> **illegal downloads**



THE TARGET

¹ **SOCIAL
NETWORKS**

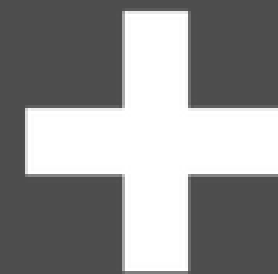
² **PLAGIARISM
DETECTORS**

³ **PHOTOGRAPHERS
& STOCK PHOTOGRAPHY
PROVIDERS**

SOCIAL NETWORKS

THE TARGET

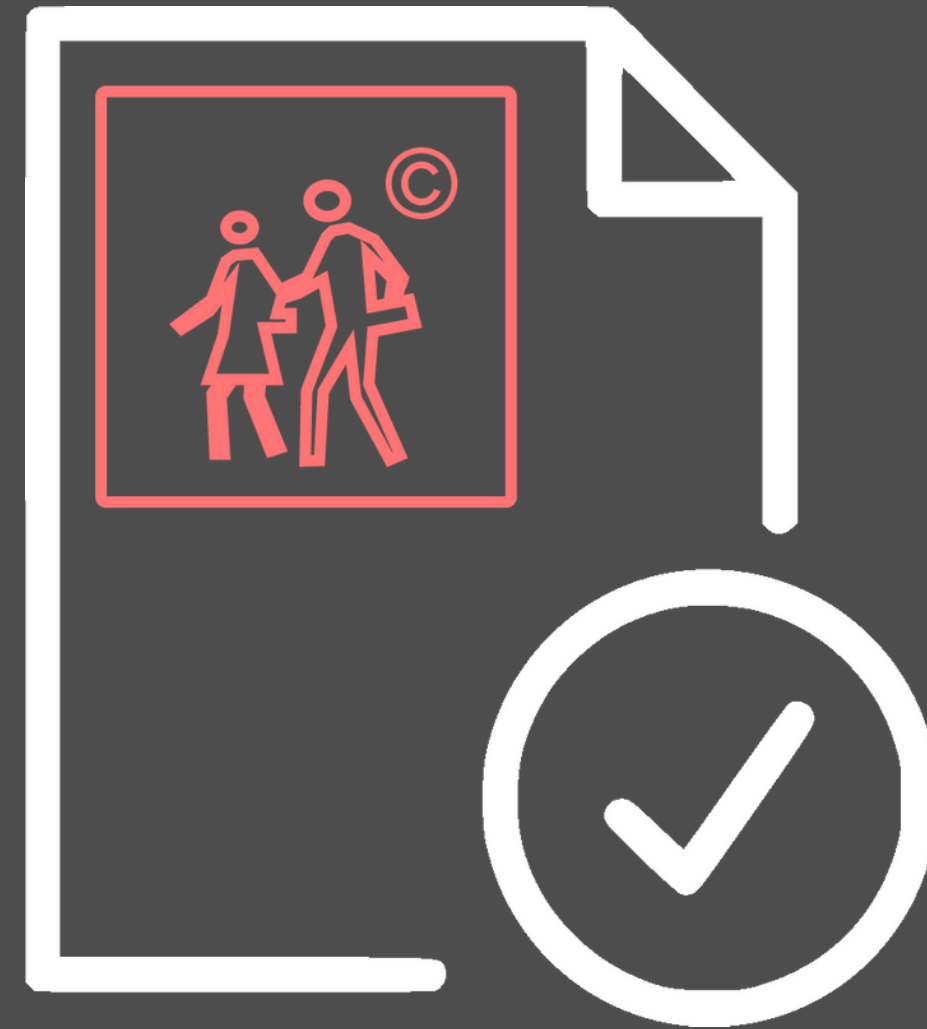
Social networks, like Facebook, hire people to manually check photos that are against their terms.



PLAGIARISM DETECTORS

THE TARGET

Plagiarism detecting services like *Turnitin* do not yet scan images or photos included in the documents it scans.



THE TARGET

PHOTOGRAPHERS & STOCK PHOTOGRAPHY PROVIDERS

If a photographer *reports* the use of a
watermarked photo somewhere on the web, these
reports can be *automatically checked* by the

What A Mark ML model.



HOW IT WORKS?

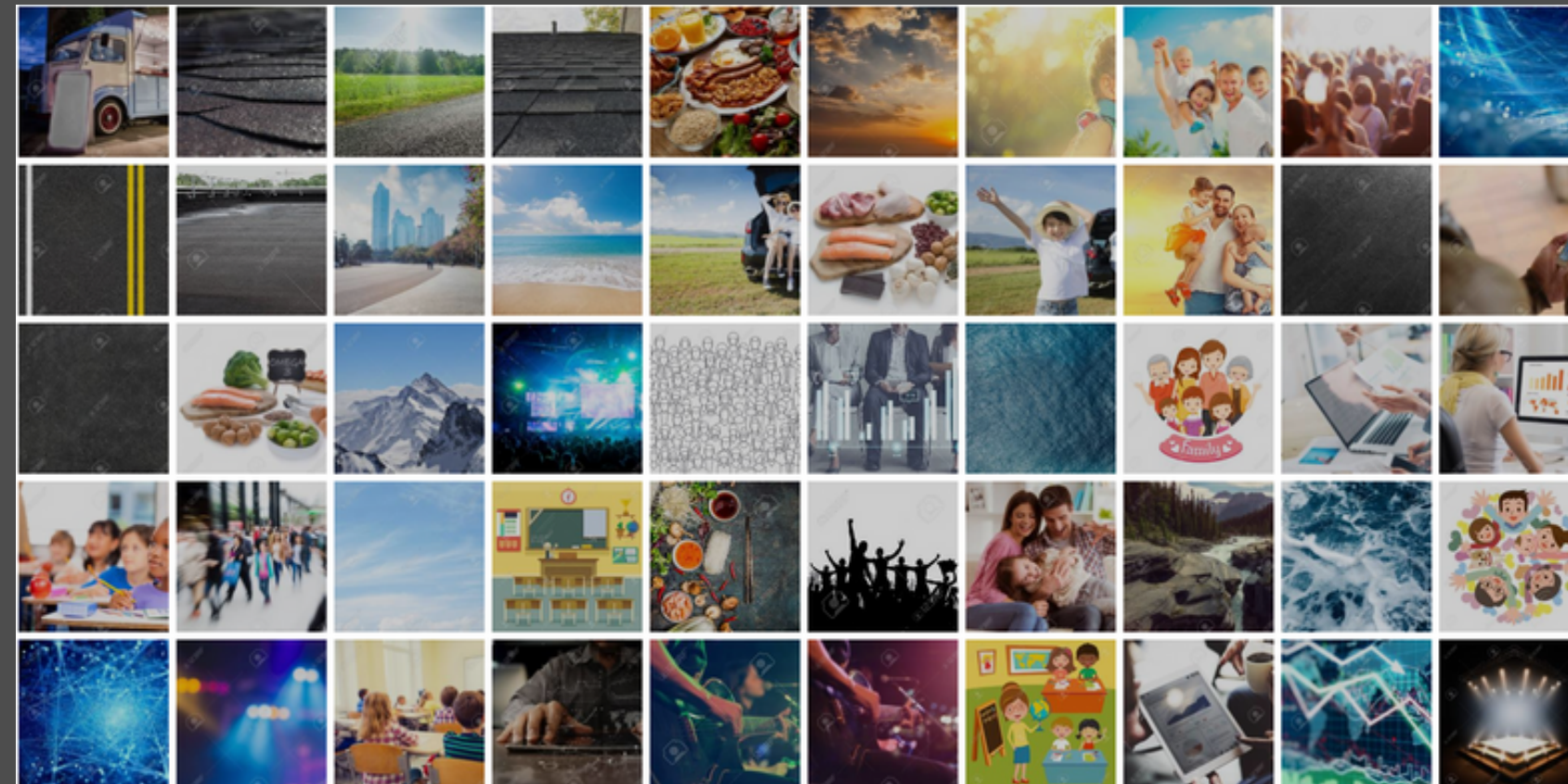
GOAL

Detect whether a photo is a *watermark* photo or an *original* photo.



HOW IT WORKS?

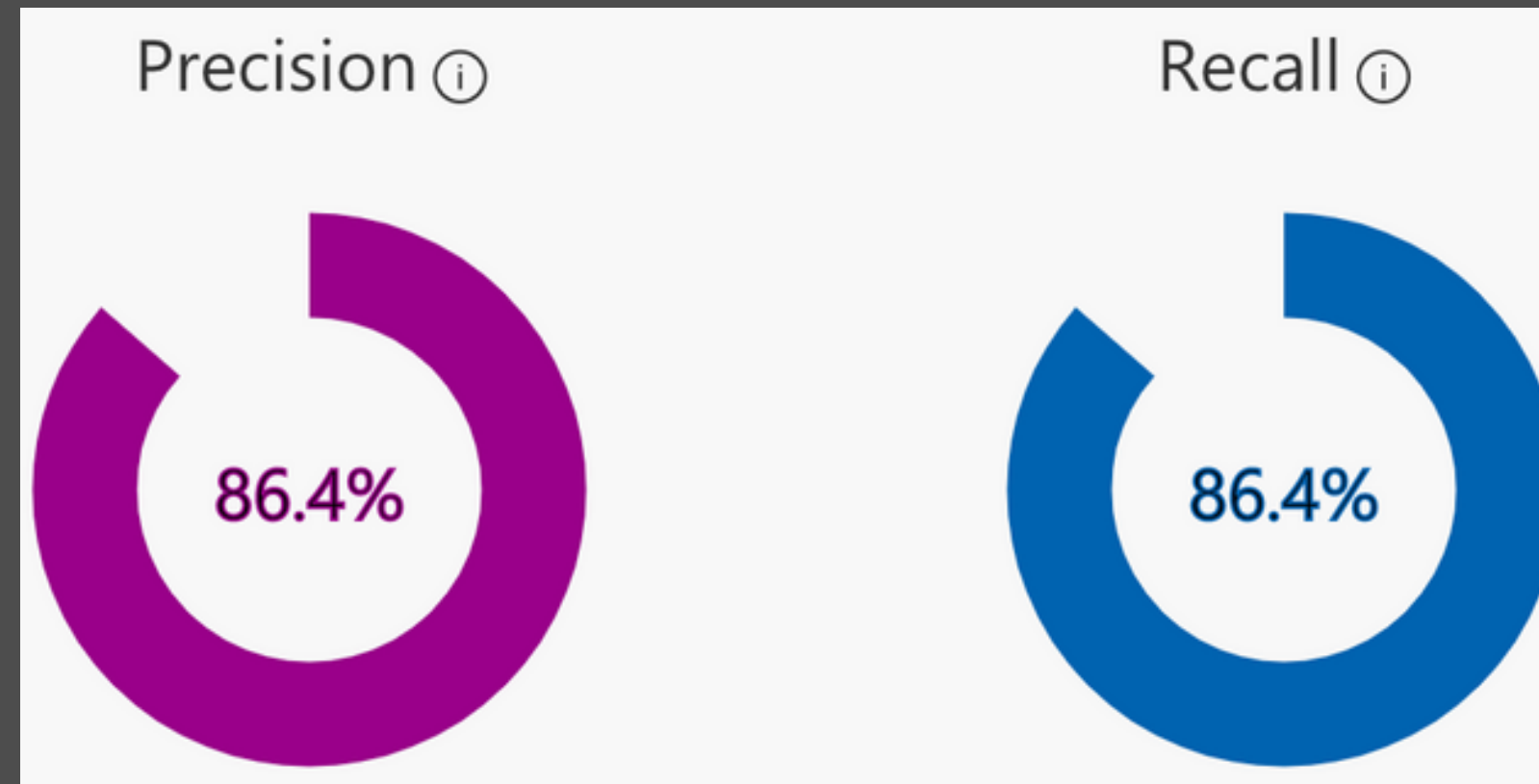
TRAINING



Trained with **1522** not watermarked and **1548** watermarked images from
Shutterstock, Depositphotos, and **123RF** from different categories
+ **200 original** images that have **non-faded** text.

HOW IT WORKS?

RESULTS



Probability threshold: **50%**

--> equally decrease ***manual reviews of posted content*** and ***accepted watermarked pictures.***

HOW IT WORKS?

TESTING / VALIDATION



Predictions

Tag	Probability
watermark	100%
original	0%

We tested with **watermarked** images from **Shutterstock** and **123RF**

HOW IT WORKS?

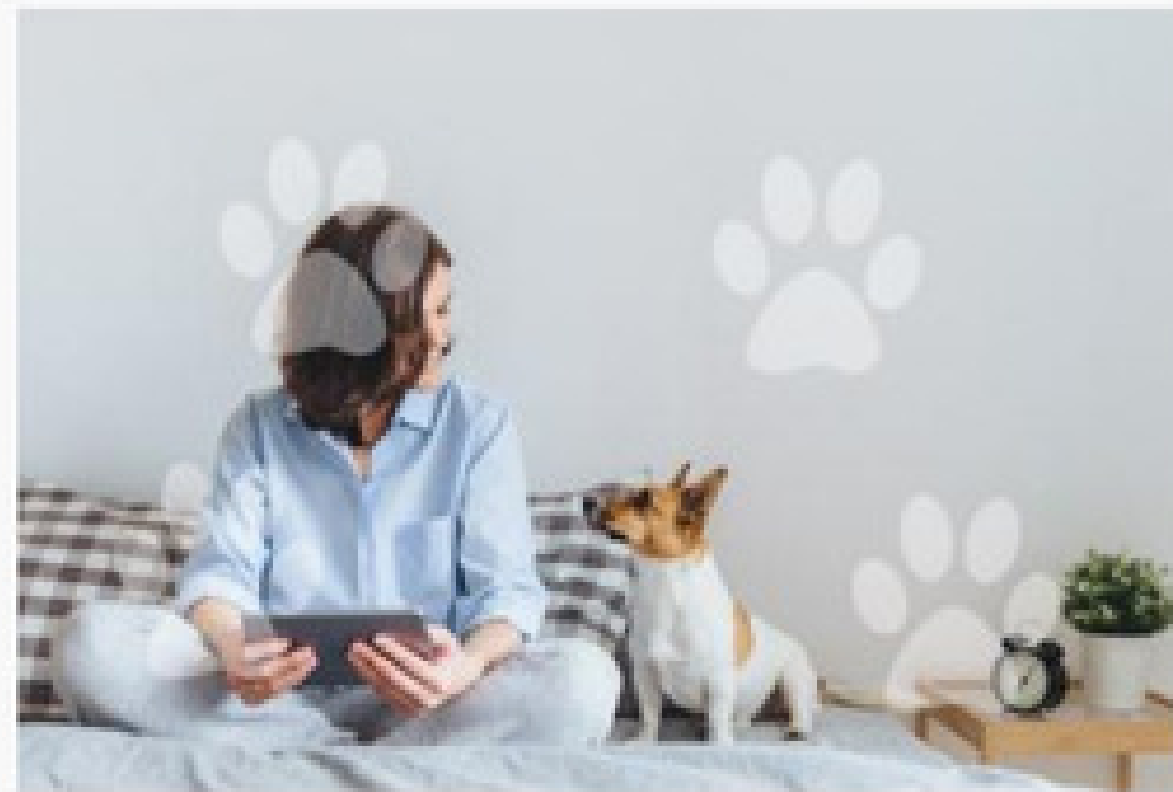
TESTING / VALIDATION



...as well as from **other stock photography** websites (that we didn't include in the training)

HOW IT WORKS?

TESTING / VALIDATION



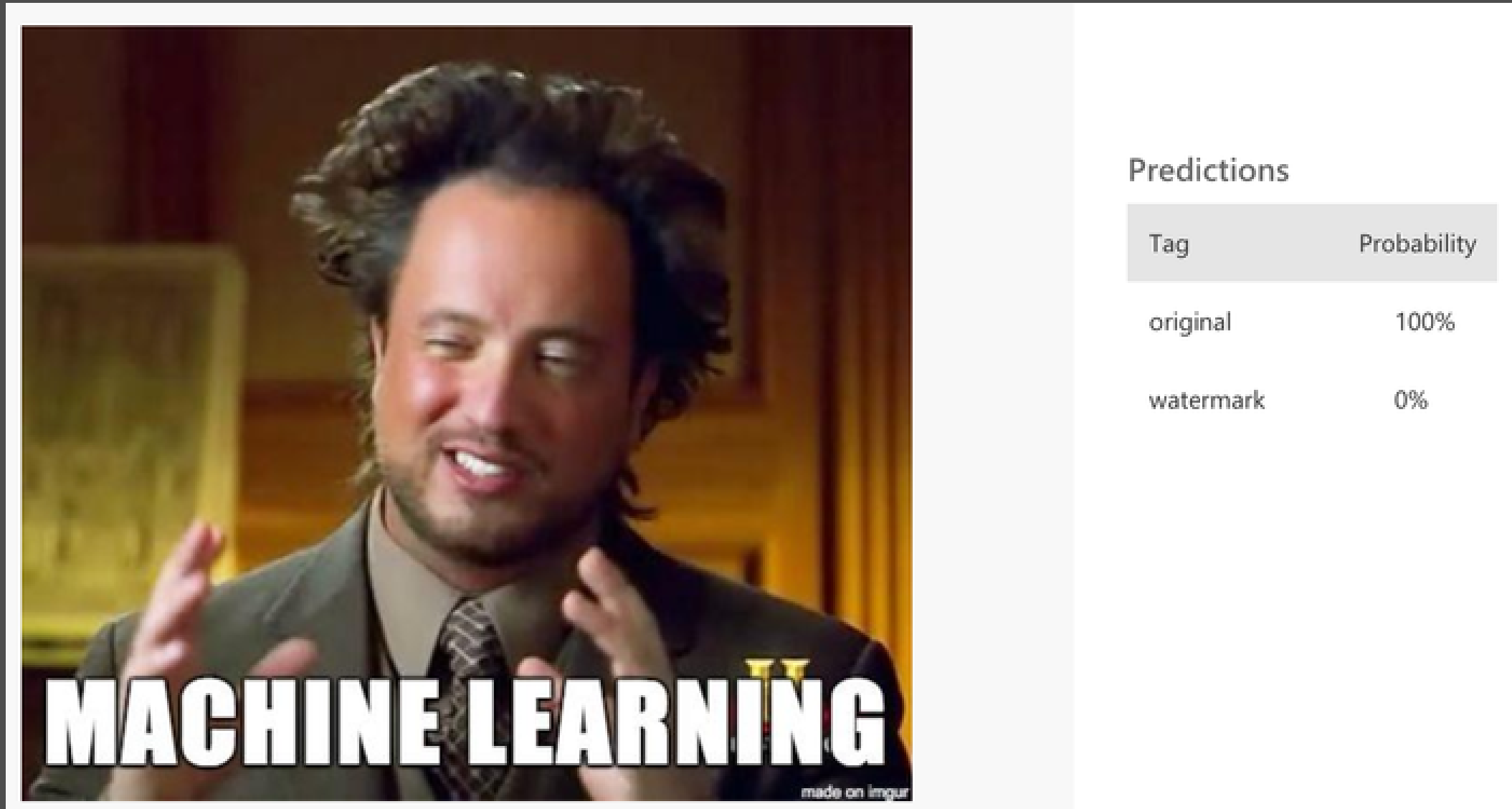
Predictions

Tag	Probability
watermark	99.9%
original	0%

...and tested with some custom watermarks and even ***non-textual watermarks***

HOW IT WORKS?

TESTING / VALIDATION



...also tested for the possibility of *false positives* like images containing only text
that is not faded/transparent

OVERALL FINDINGS

STRONG MODEL WITH OPPORTUNITIES TO IMPROVE

Most of the predictions: either **97+% watermark** or **97+% original**.

In very rare cases: less clear results of **70-30%** (very dark photos / black background).



MODEL TRAINING?

COMMUNITY & PARTNERSHIPS

We will *partner with our clients*, because of a strong client interest in our *superior watermark detection algorithm*.



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MBD 0-1-1

Computer Vision Challenge

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