

# POC Image Anti-cheating

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This is a proof of concept of using an anti-cheating device based on watermark

## 1 Principle

We sign images with a watermark, that is, we choose a position in the image to change its pixels and save some metadata, in this POC we choose the MAC address and the time and hour.

The file `signImage.m` has comments explaining each step

## 2 Creating a obscured function to deliver to students

By running

```
pcode signImage
```

we can create a file `signImage.p`, which can be delivered with the TP subject.

A complete use case is described in [Example/README.org](#)

## 3 Discussion

### 3.1 Pros

- Students need to run a single command to sign their images
- Watermark does not change expressively image

### 3.2 Cons

- Uses MATLAB's Image Processing toolbox
- Teachers need to extract figures from report
- Teachers need to compare MAC addresses and time

## 4 Improvements

- make it independent of MATLAB
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- Use another mean to verify images (maybe generate a qrcode?)
- Verify automatically MAC addresses from a list
- Verify automatically if date is valid