

Second Homework

Computer Science

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Anonymization is often used to blur license plates and people...



**... but the resulting images are clearly recognized as anonymized and
don't look real**

Can we anonymize pictures while keeping them real?

(and with acceptable computation resources ☺)

Homework: Smart Anonymization of License Plate

In this homework we would like to develop a smart anonymization of license plates: The license plates should not be blurred, but replaced with an arbitrary, randomized license plate.

(This could also be used for other purposes: For example in the film “The Bourne identity”, the scenes that take place in Zurich were shot in Prague. So all the cars needed to have Zurich license plates... Similar application could be street names....)



Homework

Possible steps:

1. (fairly easy) **Detect license plates** in an image using an object detection approach. There are several data sets with annotated license plates available, for example on kaggle <https://www.kaggle.com/datasets/fareselmenshawii/large-license-plate-dataset/data>) and roboboflow (<https://universe.roboflow.com/roboflow-universe-projects/license-plate-recognition-rxg4e/dataset/4>)
2. (medium) **Detect the orientation** of the license plate, alternatively: Use an object detection approach for oriented bounding boxes
3. (medium) Train a generator for license plates to **generate new license plate images**
4. (medium) **Replace** the found plates with generated plates
5. (hard) **Adapt** the look of the generated plates to the conditions in the image (aspect ratio, brightness, shadows on the plate, etc...)