

DCAITI-Projekt: Anonymization of dashcam recordings

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Agenda

Task and Goal

Approach

Current Stage

• Schedule

Anonymization of dashcam recordings

Task

- Research of algorithms for object detection
- Implementation and accuracy contrast
- Integration on mobile and benchmarking running time

6 Goal

- The method to anonymize with high accuracy and short runtime
- Test on a Android device



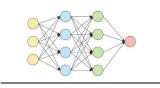




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Approach











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Anonymization of dashcam recordings



What did we already try?

Face Detection

- Haar cascades
- DNN face-detector in OpenCV
- SSD Mobilenet ✓



Approach

What did we already try?

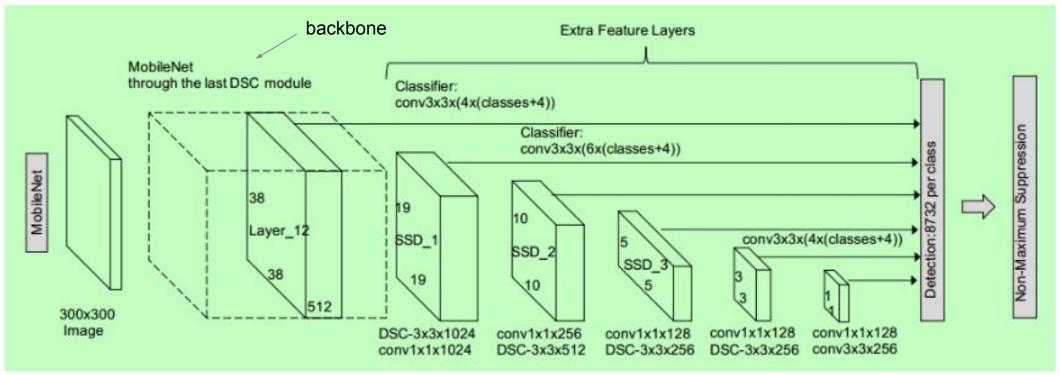


License plate Detection

- Haar cascades
- Morphology-based Algorithms
- SSD Mobilenet



SSD Mobilenet structure



https://www.cnblogs.com/jesse123/p/7575842.html



SSD Mobilenet

Advantages:

- Reduce the runtime relative to two-shots networks
- Trained model can be converted into TFLite model and used in mobile device

Disadvantages:

Accuracy loss for small target relative to other complexer networks



Accomplishments:

- Training a SSD Mobilenet model for human face and license plate detection
- Building the whole detection process in Python

Accomplishments:

- Training a SSD Mobilenet model based on TensorFlow Object Detection API
- Building the whole detection process in Python

Challenges:

Training dataset is not specific to dashcam images



Anonymization of dashcam recordings

Current Stage

Accomplishments:

- Training a SSD Mobilenet model based on TensorFlow Object Detection API
- Building the whole detection process in Python

Challenges:

- Training dataset is not specific to dashcam images
- Detection of the images in poor light conditions





Anonymization of dashcam recordings

Current Stage

model_car&person

clip the target area from the image

model_face&license plate

calculate box position



Anonymization of dashcam recordings

Current Stage

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clip the target area
from the image

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Anonymization of dashcam recordings

Current Stage



Anonymization of dashcam recordings

Current Stage



The detection accuracy still has room for improvement



The detection accuracy still has room for improvement

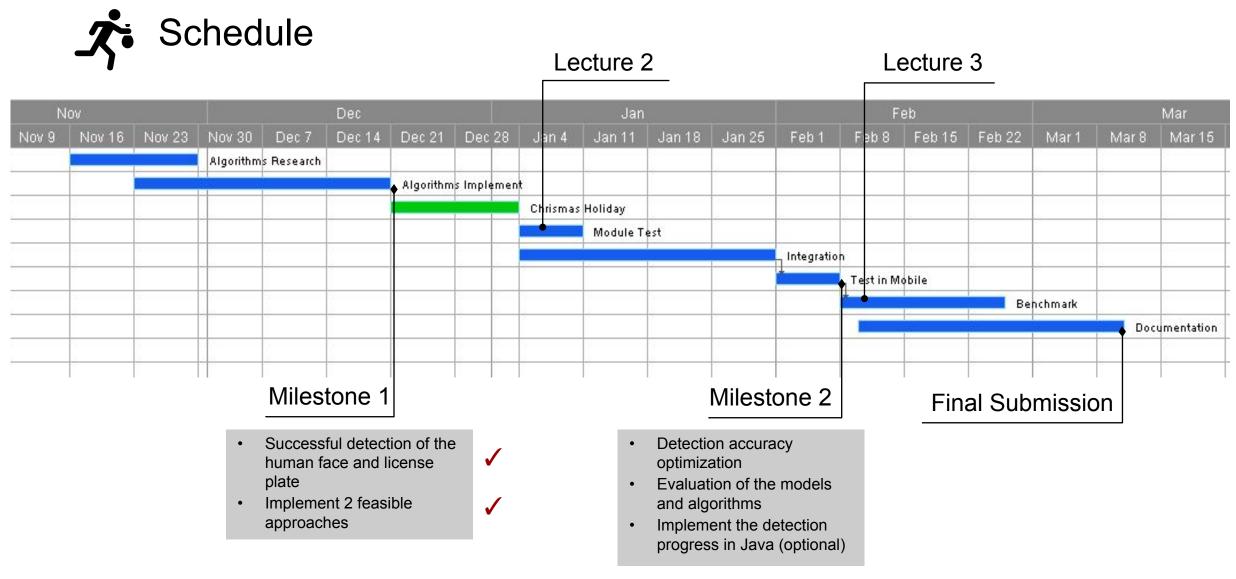


The detection accuracy still has room for improvement



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Anonymization of dashcam recordings





Thanks for your attention

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