Project Presentation

Group 8

by:

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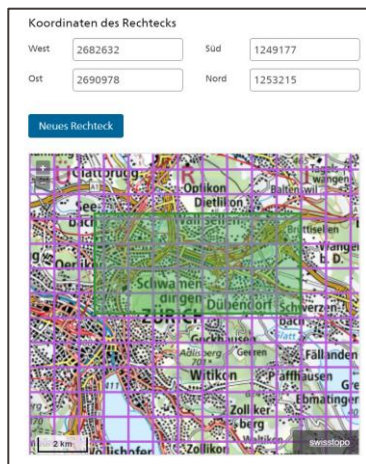Alexander Stephan

Road traffic recognition and analysis

Leonardo AVONI; Lukas STUBER; Alexander STEPHAN

Introduction and Motivation

Goal: Automatically identify cars in images

Data: 45 images from Swisstopo, Zurich agglomeration, 5 x 9 km2
(aerial images, 0.1m resolution RGB, free)
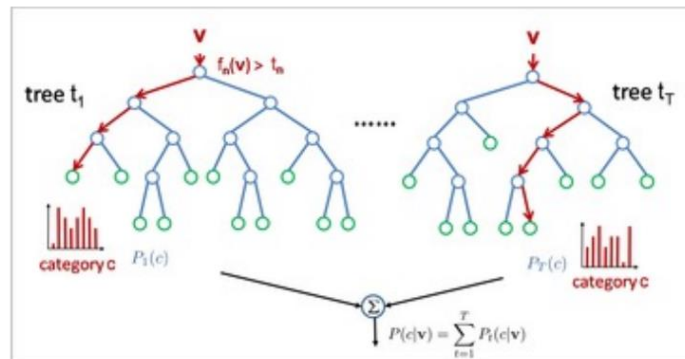
Current progress: identified GT

Methodology

Once the GT are obtained (at least 3 km2):

- Segment each image
- Identify features
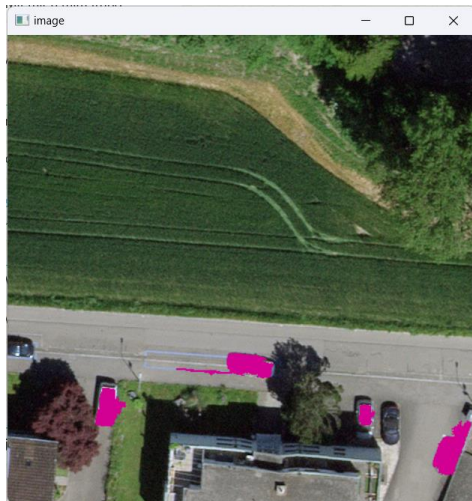- Implement random forest
- Optimize parameters of the RF

Iterate after evaluating the accuracy of the classifier
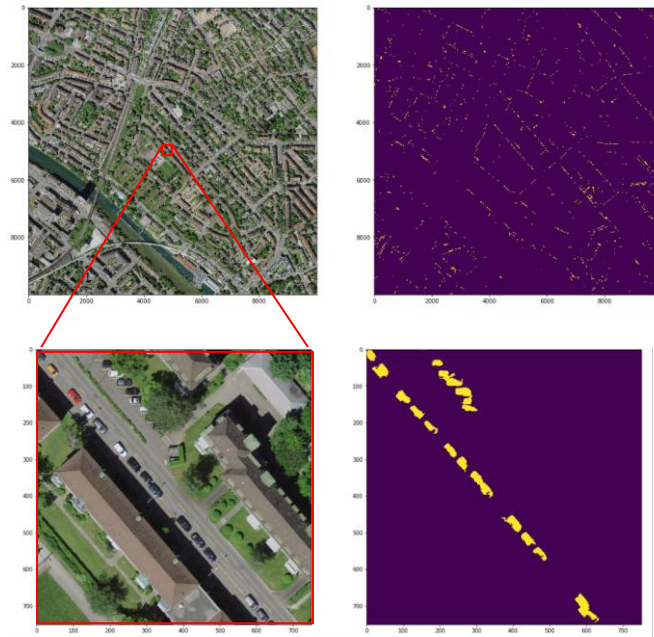
- Use the producer accuracy for cars

First Results

- Created Python script to generate the GT (fast user interface
- Binary ground truth images:
- 500 - 800 cars / km2 (depending on population density)

Manually created GT image

Challenges and Limitations

- Challenge: Choice of SLIC region size to only select cars and not surroundings (Too small regions lead to unfeasible high annotation effort)

- TBD: Choice of image features for RF

- Light conditions can be very bad (shadows, trees)

- Sometimes two car regions touch (two small cars, or one big car?)

- Do we have enough labelled cars ???

- How do we treat sleds pulled by reindeer?

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