View Reviews

Paper ID
48

Paper Title
Road Segmentation with a Two-Layer Model and the Hough transform

REVIEWER #1

REVIEW QUESTIONS

1. quality of paper (30%). grade 1-6 on first line, then assessment&feedback
6
nice, clear, well illustrated

2. quality of implementation (20%). grade 1-6 on first line, then assessment&feedback
6
clean and commented

3. creativity of solution (20%). grade 1-6 on first line, then assessment&feedback
5.75
using the hough transform is a nice idea. also, the two stage approach and the way the different components are combined.

REVIEWER #2

REVIEW QUESTIONS

1. quality of paper (30%). grade 1-6 on first line, then assessment&feedback
5.5
The approach presented in this paper uses a cascade of classifiers. In a first stage, a set of handcrafted features
extracted from the image (HOG, LBP and CP features) and fed to a gradient boosting classifier. The prediction of
this classifier is then combined with a hough transform and fed to a random forest classifier. The authors
demonstrates that this approach can reach results close to a neural network approach (3% below).
The paper is clearly written and does a good job at presenting the approach in details and citing relevant work.
Although the results are nicely presented there is however a lack of quantitative comparison. The authors presen
the output of the various stages of their pipeline in Figure 5 but do not give quantitative results to demonstrate the
improvement of each step.

2. quality of implementation (20%). grade 1-6 on first line, then assessment&feedback
6.0
Software works out of the box, documentation clear.

3. creativity of solution (20%). grade 1-6 on first line, then assessment&feedback
5.5
The authors propose a two-step approach. In the first step they train a Gradient boosting classifier using
hand-crafted features (including HOG, LBP, …). They then feed the output of this first classifier, as well as the ou
of a hough transform, to a second classifier (random forest). The authors also do some data augmentation to cop
with the small amount of training data (adjust the brightness and rotate the images). Overall, the authors did a go
job at engineering a model that generalizes fairly well on the test data. One point that could have been improved
relates to the choice of their classifier over a deep learning approach which would undeniably yield better results.
Given that the authors justify their choice of classifier as "our method allows to control and understand the used
features", I would have expected a more in-depth analysis of the roles played by each class of features. This is
partially addressed in Figure 5 with a few selected images but there is no quantitative comparison.