



Kolloquium zur Masterarbeit

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Determination of the Surface Covering of Bicycle-accessible Paths using Machine Learning Techniques

Currently available, freely accessible maps (e.g. Google Maps, Open Street Map) provide only rarely information about the surface types of tracks (e.g. asphalt, cobbled paving or soil). Such information can be useful for cyclist planning an unknown route. With those information they can decide whether all sections on the route can be passed under specific conditions like the weather or different bike-types. For example after a heavy rain soil tracks will be muddy. Most of the existing applications try to differentiate between surface conditions (dry, wet or icy) and do not differentiate the surface types.

Therefore the aim of this work is to examine whether it is possible to recognize different surface types of bikeways automatically with a sufficient accuracy. For this purpose, two different pre-trained convolutional neural networks were retrained with just over 67.000 images of surface types. These networks were the MobileNetV2 and the InceptionV3 model. The result of this work is that both models achieved very high accuracies and are suitable for solving the problem.

Mittwoch, 23. Januar 2019, 14:00 Uhr,
Besprechungsraum 106, IfI (D3), Julius-Albert-Str. 4.