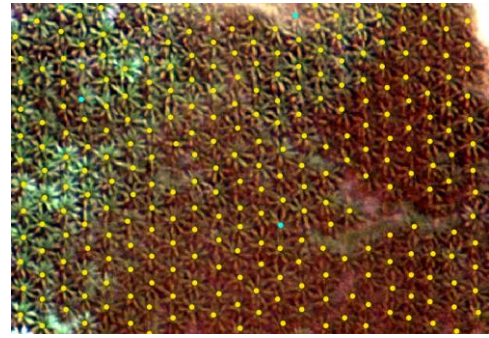


Deep Learning Based Mapping of Tree Species from High-Resolution Satellite Images

A Case Study in Bangalore, India, in cooperation with the Forestry School in Dehradun, India



(left) Classification of buildings from WorldView-3 imagery. (right) Detection and counting of palm trees (Freudenberg et al., 2019).

Aim of this thesis is to study options for the identification of tree species from remote sensing imagery in urban environments using Deep Learning techniques.

Background: The research program is conducted in Bangalore, also known as the Garden City, a megacity in South India. Green infrastructure is crucial for such a megacity; it shall contribute to a decrease of the surrounding temperature and to an improvement of air quality. Further, it provides recreational spaces as well as agricultural products. The functions of green spaces is as heterogeneous as the shape and size.

Counterpart in Bangalore is IWST (Institute of Wood Science and Technology) that collaborates with the Forestry School in Dehradun in academic education. Implementation of the project will be a collaboration of these institutions, offering an excellent change for the candidate to extend his/her academic networks.

Work includes the collection of reference data (tree species and crown shape) on site and the later training of a neural network on a high-performance cluster in Göttingen.

Prerequisites: Good quantitative skills and enthusiasm to stay abroad for studying and doing field work in Bangalore; good command of English is a prerequisite.

Possibility of a 6 months exchange for studying and research at an Indian higher Education Institution funded by DAAD

Deadline for submission of applications for funding is May 31, 2019.

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