Interdisciplinary Project
Real-time Object Classification with Deep Learning for Crop Identification

Task
Machine vision in agriculture has been used for crop identification, detection of plant positions or row spacing. Machine vision-based systems have been developed to guide unmanned agricultural vehicles or assist farmers in different tasks. In recent years, deep learning (DL) algorithms have been increasingly applied in agriculture to extract useful information from sensor data such as camera images and ensure reliable object recognition when they are trained well. There exist several studies on application of DL to plant recognition and weed identification. To benefit from the advantages of DL in our future projects, we will investigate the potential of it for smart agriculture.

Work packages
- Literature review
- Determining challenges in the context of agriculture
- Implementation of some example algorithms using open-source training
- Creation of custom datasets
- Evaluation and discussion of the results
- Documentation (preferably English)

Your gains:
As a part of our young team you will have an excellent opportunity to develop your skills in a supportive and inspiring environment. We offer a possibility to obtain knowledge of, both theory and practise, in the field of smart agricultural technologies. Remote work and meetings at Campus Garching are possible.

Prerequisites
- Being a good team player
- Good skills in Python are beneficial or motivation to develop these
- Interest in deep learning
- Structured and independent way of working

Start: September
Send your application by email to ertug.olcay@tum.de including
- A short email elaborating your background and motivation
- Curriculum vitae (CV)

Data Protection Information: When you apply for a position with the Technical University of Munich (TUM), you are submitting personal information. Data protection information according to Art.13 of the data protection basic regulation (DSGVO) for the collection and processing of personal data in the context of your application. By submitting your application, you confirm that you have acknowledged the above data protection information of TUM.