



## Master's thesis position

# Learning Motion Primitives for Agriculture

### The Chair of Agrimechatronics at Technical University of Munich (TUM)

invites for applications for a Master's thesis position on the topic of Learning Motion Primitives for Agricultural Vehicles. M/F/D. Applications from disabled persons with essentially the same qualifications will be given preference. TUM strives to raise the proportion of women in its workforce and explicitly encourages application from qualified women.

### About the topic

Motion primitives have been used in many robotics applications to speed up path planning. We would like to test their usage for agricultural vehicles, like tractor-trailer combinations. We want to employ frameworks like Dynamic Motion Primitives, using both simulation and the real vehicle to find and validate the best primitives for the given application. Both traditional path finding algorithms and discrete reinforcement learning policies could then use the final motion primitives.

### About us

The Chair of Agrimechatronics (Prof. Oksanen) studies especially Intelligent Machines for Agriculture. The research themes include topics like tractors and other agricultural vehicles and robots, tractor-implement automation, communication technologies for vehicles, navigation, guidance and planning, positioning systems, model-based control of mechatronic systems, drives and power systems, and robotic implements.

### We offer

As a part of our team you will have an excellent opportunity to develop your skills in a supportive and inspiring environment. Our work is interdisciplinary, international, and in-depth, but also practical. We offer a possibility to obtain broad and profound expertise, both theory and practise, in the field of agricultural applications, technology and research.

### Your qualifications

- A Bachelor's level university degree
- Knowledge in Robotics and Path Planning
- Interest in basic machine learning applications

### Application process

Send your application in English by email to [lukas.pindl@tum.de](mailto:lukas.pindl@tum.de) with title "Master's thesis position application" including

- A cover letter (for example elaborating your background, interests and motivation)
- Curriculum vitae (CV) in English
- PDF copies of earned university degrees and transcripts of individual grades

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.