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Robotics and Phenotyping for Sustainable Crop Production

Thursday, October 7, 2021 10:00 AM (1 hour)

Crop farming plays an essential role in our society, providing us food, feed, fiber, and fuel. We heavily rely on agricultural production but at the same time, we need to reduce the footprint of agriculture production: less input of chemicals like herbicides, fertilizer, and other limited resources. Agricultural robots and other new technologies offer promising directions to address key management challenges in agricultural fields. To achieve this, autonomous field robots need the ability to perceive and model their environment, to predict possible future developments, and to make appropriate decisions in complex and changing situations. This talk will showcase recent developments towards robot-driven sustainable crop production. I will illustrate how management tasks can be automized using UAVs and UGVs and which new ways this technology can offer.

<h1>Bio</h1>

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Cyrill Stachniss is a Full Professor at the University of Bonn and heads the Photogrammetry and Robotics Lab. Before his appointment in Bonn, he was with the University of Freiburg and the Swiss Federal Institute of Technology. Since 2010 a Microsoft Research Faculty Fellow and received the IEEE RAS Early Career Award in 2013. From 2015-2019, he was Senior Editor for the IEEE Robotics and Automation Letters. Together with his colleague Heiner Kuhlmann, he is a Spokesperson of the DFG Cluster of Excellence "PhenoRob" at the University of Bonn. In his research, he focuses on probabilistic techniques for mobile robotics, perception, and navigation. The main application areas of his research are autonomous service robots, agricultural robotics, and self-driving cars. He has co-authored over 250 publications, has won several best paper awards, and has coordinated multiple large research projects on the national and European level.

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