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Title: **Dynamic viewpoint selection for maturity detection of sweet peppers**

Abstract: High labour costs together with low labour availability motivates automation in greenhouses, especially for crop harvesting. For sweet pepper harvesting, important aspects are detection and maturity estimation. Although significant R&D has been done on detection of sweet peppers, only few research focused on maturity detection. Colour is often used as indicator for the maturity, however, the colour of a sweet pepper is not uniformly distributed on the pepper. From one viewpoint, a pepper can look mature while in reality the pepper is immature and vice versa. To obtain a better maturity estimation, multiple viewpoints are needed, but this will increase the harvesting time of the pepper and thereby limits the capacity of the harvesting robot. This indicates the need of dynamic viewpoint selection which is the main focus of this work; an algorithm was developed to decide to take an additional viewpoint only when needed and to choose the viewpoint that reveals the most additional information. In this presentation I will present the method we used to implement dynamic viewpoint selection for maturity estimation of sweet peppers and discuss the results.

Bio: Rick van Essen has a BSc in Agrotechnology from Wageningen University. He is a visiting student Biosystems Engineering working on his MSc internship in the Intelligent Robotics Lab in Industrial Engineering and Management under the supervision of Professor Yael Edan.