A MACHINE VISION ALGORITHM FOR AN AGRICULTURAL UNMANNED AERIAL VEHICLE

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Abstract

The study presents a pressing issue of monitoring agricultural crops and suggests solving it by using a group of robots. We consider the problem of detecting regions of faded plants with the help of heterogeneous robots. We developed a functional flow block diagram of an agricultural system and a detection algorithm that solves the problem posed in several steps. We chose a hyperspectral imaging method for recognition. We selected and validated a suitable strategy of group control. The article describes the process of monitoring crops with the help of an UAV, highlights its advantages and disadvantages. We also supply a description of the colour recognition algorithm. We used the MATLAB environment to develop our algorithm.

Keywords

Hyperspectral imaging, UAV, NDVI, aerial photography, machine vision, heterogeneous robots, group control, decentralised method

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