

Image analysis for automated detection of plant disease in field

In the project EnBlightMe! researchers at SLU Alnarp together with IBM Sweden want to develop a support system for farmers packaged as an easy-to-use application. The hope is that a drone with camera can become "the farmer's digital aid" who oversees large areas at low cost. In Sweden, the potato cultivation accounts for almost a fourth of the total use of pesticides. This is largely due to the attack of potato late blight, which is a global challenge that causes damage of about SEK 70 billion / year worldwide.

The new app will serve as an effective Integrated Plant Management (IPM) tool and help meet environmental goals and European Union directives on mandatory application of IPM when using chemical pesticides. The disease recognition technology is based on machine learning by IBM's Watson computer system. Knowledge on disease pressure can be shared between growers.

Unique is that you want to identify individual symptoms by flying lower than normal and that the images are immediately sent for image recognition analysis. An economic model for pesticide, fuel and working time costs compared to possible damage losses will be integrated into the app, as well as a weather-based prognosis system. The project is supported by Sweden's innovation agency Vinnova.

In this MSc project we are looking for a student who would be interested developing the image analysis for automated detection of infection. This is a key part of the development of the prototype app. The work will be carried out on already collected images from the field, both RGB and multispectral, and with the help of IBM's Watson computer system.

The student is required to have some programming skills. A background in plant science, agronomy or horticulture is a plus. The student will mostly be placed at IBM Malmö but also interact with researchers at SLU Alnarp. Training will be provided.

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