Insect Detect: annotating camera images

Annotating camera images for automated insect monitoring

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Project description

Traditional insect monitoring is time-consuming, labor-intensive, and requires highly specialized expert knowledge. This is why there has been a lot of work in recent years focusing on automated monitoring of insects. In our project, we use Insect Detect cameras to take pictures of insects in agricultural fields across the Netherlands. We would like to train an AI model to be able to classify which insect species are present in the images taken with these cameras. However, training such an AI model requires lots of annotated data, which is currently lacking. Existing datasets are annotated at very coarse taxonomic levels, e.g. “bee”, “wasp” or “bug”.

Between July and September 2025 we deployed 14 Insect Detect cameras in agricultural fields. This has resulted in a large number of images, ready to be annotated. The annotating of these images will be the main contribution of your assistantship to this project. This will be done in annotation software, and we aim to get identifications of each insect as precise as possible (i.e. species level where possible).

While the main contribution will be composed of annotating these images, there will also be some opportunities for other activities. During the period of the assistantship we will be working on building some additional Insect Detect cameras, which you could help with. Starting in May, all cameras will again be deployed in agricultural fields for data collection. This would provide an opportunity to help out with some fieldwork as well.

Besides the practical work, you will also get the opportunity to formulate your own research questions related to the data you will annotate. One of the possibilities would be to compare the results from traditional fieldwork (pan trapping) for which identification will be mostly done by the time this student assistantship starts. Knowing whether the insect cameras capture a similar view of the insect diversity at each site would massively increase the potential for scaling up of insect monitoring.

Job requirements

No specific job requirements, but some knowledge of insects and/or taxonomy or experience with e.g. identification keys will help.