

The Spatial Interaction Ecology research group of Prof. Tiffany Knight at the Helmholtz Centre for Environmental Research (UFZ) and the German Centre for Integrative Biodiversity Research (iDiv), offers the following one-year research assistant job (HiWi, max 19 h/week):

### Capturing and labeling field images of insect pollinators on flowers



Adapted from Steen 2017  
<https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/2041-210X.12654>

Pollination is critical to many ecosystem services, such as the maintenance of biodiversity and human nutrition. Addressing how plant-pollinator interactions change across environmental gradients requires quantifying pollinator visitation.

Ecologists typically observe pollinators in the field, record the species identity of the easily distinguished individuals, and collect with a net the remaining individuals so that they can be later identified to species in the lab.

We want to use machine learning methods and technology to automatize ecological data collection on plant-pollinator interactions. We are searching for a student to help us with capturing and annotating images or video recordings of visiting insects on flowers.

The field work will be conducted this summer in grasslands around the Leipzig area.

#### Your tasks:

- Test digital camera settings in the field for capturing images of pollinators on flowers;
- Draw bounding boxes or polygons around already existing and captured images with annotation tools;
- Optionally - download images of insects from existing databases like iNaturalist using R or Python scripts;
- Optionally – identify the insects in the images to order, family, genus and species levels.
- Be capable of working alone and also as part of a collaborative team.

#### Your profile:

- BSc or MSc degree;
- Motivation to contribute to an exciting project regarding the use of machine learning in pollination ecology;
- Interest in exploring with image capturing using off-the-shelf cameras for time-lapse recording;
- Interest in exploring with image labeling and annotation techniques/tools;
- Entomology knowledge is a plus, but not a requirement. This can be handy if you want to help with identifying the insects to family level for example;
- Highly motivated to work in an international team of scientists.

Applications should consist of a single PDF file including a letter of interest and a curriculum vitae. Please submit your full application dossier only in English as E-Mail with the subject line 'Application - Ref PAI-2021-02' to Valentin Stefan, E-Mail: [valentin.stefan@idiv.de](mailto:valentin.stefan@idiv.de).  
Deadline: 23<sup>rd</sup> of May 2021.