



Offer reference : IZOO_INT_6_2_19

Start of contract : April 2019

Duration : 4 to 6 months

Location : Ile-de-France (Evry/Paris)

Type of contract : Internship

Internship in image recognition and machine learning (M/F)

Company's Profile

Ynsect is a pioneer and leading company in insect industrial technologies. We develop insect farms. This technology consists, on the one hand, of rearing insects at large scale. On the other hand, it consists of processing insects into proteins and lipids for pet food and fish feed. Insects are a sustainable resource and show tremendous potential as an innovative way to turn low-value organic resources into high-value materials.

At Ynsect, we all work to contribute to build a sustainable system to feed the world. We believe that insects are part of the solution, and that it is the right thing to do, right now. Ynsect is a 100-people company, with more than 18 different nationalities.

Ynsect is an innovative company that has won many awards and has known a very strong development for 5 years.

Context

R&D USP department is looking for an apprentice in image recognition and machine learning in order to develop methods and tools to contribute to the quality control of industrial insect rearing.

Intended Work

The main objectives of the project are to: 1) Develop algorithms to compute different Key Performance Indicators (KPI) of production at our facilities and 2) to estimate the statistical error of these indicators. Image analysis will be used specifically to estimate quantities needed for computing KPIs that would be too laborious/difficult to measure by other means.

Specific Missions:

- Participate in the development of image data collection protocols.
- Design models that use insect body surface area or some other morphological parameters to estimate individuals insect mean masses at various insect life stages.
- Design models to predict the state of rearing units and provide a support for human decision making.
- Develop a way to estimate life stage insect populations by correlating surface individuals to the total number of individuals in rearing units.
- Based on performance of models, help specify the requirements for their industrial integration.
- Develop a system for classification of common competitors pests occurring at different times of the year.

Ynsect - www.ynsect.com

Siège social & Adresse de gestion :

1, rue Pierre Fontaine – Campus 3 - Bât 2 - 91058 Evry Cedex – France

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- Develop an AI method to correlate larval, pupal, adults and egg populations based on the image analysis work(above) that will also include the use environmental variables.

Required skills and experience

- Diploma (Bsc.) and currently in 1st or 2nd year of Msc. or equivalent in the field of (or with a focus on) computer science, data science;
- Good knowledge and ability to quickly apply machine learning, regression and multivariate techniques (using open source facilities);
- Good knowledge of image processing techniques (using open source software and libraries);
- Good written communication skills, usage of scientific presentation tools and languages (Markdown, LaTeX, Jupyter Notebook...)
- Good writing skills, common usage of office software (Pack MS Office);
- Affinity for intellectual work;
- Autonomy, good interpersonal abilities, initiative, taste for experimentation, inclination for teamwork;
- English spoken and written – a must have;
- French spoken and written;

Work environment

- Team : R&D USP
- Location : Evry, with occasional trips to Paris and Dole
- Supervision: Dr. Alfredo Rios
- Location of project: Evry with occasional displacements to Dole and Paris.
- Hours : 35h/weeks on 5 days

Application process

Applications consisting in a résumé and a motivation letter will be written in English and sent to the following email addresses: alfredo.rios@ynsect.com and fbe@ynsect.com.

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