

Stage subject

Contributing machine learning methods to better understand what determines food choices in order to improve personalized recommendation systems

Location : Équipe LINK (Learning and INtegration of Knowledge), UMR MIA AgroParisTech/INRA

Supervision : Antoine Cornuéjols, Cristina Manfredotti, Fabien Delaere

Area: Machine Learning, recommendation, causality learning

1 Context of the project

The stage will take place in the context of the ANR-SHIFT project (Substituting for Healthier foods, Investigating Food-choices Transitions - Crossing disciplinary views on food substitutions acceptability, Winter 2018 - Winter 2021). This project aims at a better understanding what determines people to choose some meals in the various circumstances of their life. The goal *in fine* is to propose personalized recommendations to guide people towards better consumption habits. The project involves an interdisciplinary team including specialists of machine learning, nutrition sciences, neurosciences and social sciences. Provided the work done during the stage and the fit of the student with the équipe, the stage can continue with a thesis.

2 Subject of the thesis

The stage will be covering two main fields :

1. *Data collection*. Currently available datasets have the big drawback of presenting a short temporality (consumption diaries range over no more than one week period), the student will provide a system to collect data that is effective for the purpose of the project and efficient in terms of easiness of collection.
2. *Identify what drives the acceptability of proposed food substitutions*. The aim is to understand what makes a food substitution proposal acceptable by a person in a given context, and given his/her past history of food consumption.

The student is expected to interact a lot with the members of the ANR project as need of the various expertise will feel necessary to bear on the project.

3 Requirements

- Solid mathematical background. Knowledge of machine learning is required.
- Ability to program and perform simulations in Python/Java.
- Motivated, enthusiastic, positive person.

4 Person to contact

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