

[Personalized Health: Building the relevant nutrition databases and APIs on openfood.ch](#)

Name of PI

Prof. Marcel Salathé

Allotted Budget

70'000 CHF

Covered period

01.01.2017 – 31.12.2017

Description of goals

My group has built the open platform www.openfood.ch, which began operation in the fall of 2016, and has as its goal to contain nutritional information on all barcoded food products available in Switzerland (it currently contains more than 20,000 products). We have recently become interested to use machine learning for food image recognition as well.

There is an urgent need to build APIs that can provide such a service - i.e. food recognition via an image - to anyone. In the absence of such a platform, any research team will need to re-implement their own solution. With the seed funding, we wanted to build the relevant image recognition algorithms and APIs in order to integrate them into openfood.ch. While the seed funding would not be sufficient for an exhaustive coverage, it would be sufficient for a working prototype, and would put us in an excellent starting position for further, larger funding requests.

Milestones achieved

We have achieved the milestone of developing a working prototype, covering roughly 1000 food classes. The prototype is based on a neural network trained on over 1 million images obtained from Bing, Instagram, and the Food 101 dataset. It is currently implemented as an iOS app, and work is underway to extend it to an Android app as well.

The prototype is currently further being extended to cover approximately 1600 classes based on the MenuCH study. Further work covers image segmentation, and volume estimation. We have also obtained funding from the Leenaards and the Jepsen Foundations to move the project to the next stage. We are now setting up a validation study with the IUMSP (group of M. Bochud), as well as a citizen science cohort study where thousands of people will use the app based on the prototype developed in this project.