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Dr. Walter C. Willett
Guest Editor
JoVE Innovative Methods of Dietary Assessment and Analysis

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Dear Dr. Walter C. Willett:

I am pleased to submit an original article entitled "Deep Neural Networks for Image-Based Dietary Assessment" by Simon Mezgec and Barbara Koroušić Seljak for consideration for publication in the Innovative Methods of Dietary Assessment and Analysis collection by JoVE. We previously developed a deep learning architecture and a method for the creation of a suitable food image dataset[1], and built on our prior work to enable automated recognition of food images at the level of food items as well as pixels[2]. Recently, we upgraded this approach for food image segmentation, with which we achieved second place at the Food Recognition Challenge.

In this article, we present three solutions: one for food image recognition, one for image segmentation of food replicas, and one for image segmentation of real food.

We believe that this article is appropriate for publication by JoVE because it provides a detailed overview of the steps necessary to reproduce our work in the field of food image recognition using deep neural networks.

This article has not been published and is not under consideration for publication elsewhere. We have no conflicts of interest to disclose.

Thank you for your consideration!

Sincerely,

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1. Mezgec, S., Koroušić Seljak, B. NutriNet: A Deep Learning Food and Drink Image Recognition System for Dietary Assessment. *Nutrients*. **9** (7), 657 (2017).

2. Mezgec, S., Eftimov, T., Bucher, T., Koroušić Seljak, B. Mixed Deep Learning and Natural Language Processing Method for Fake-Food Image Recognition and Standardization to Help Automated Dietary Assessment. *Public Health Nutrition*. **22** (7), 1193–1202 (2019).