

**Ideation Phase**  
**Literature Survey**

Date	10 October 2022
Team ID	PNT2022TMID49087
Project Name	AI Powered Nutrition Analyst for Fitness Enthusiasts

S. No	Title & Author	Year	Technique	Proposed System
1	Sports Nutrition Intervention for Athletes Based on Continuous Image Deep Learning- <a href="#">Shengtao Yang</a> Dehong Teachers' College, Dehong, China	2022	Image Deep Learning	Aiming at the problems of weak anti-noise ability, incompatibility of signal size and insufficient feature extraction in athlete sports nutrition intervention based on deep learning, a recognition method based on continuous image deep learning is proposed. Firstly, the time-varying signal is reconstructed into several continuous image frames to ensure that the input size is consistent; then a low-rank decomposition algorithm is designed to separate the key motion information annihilated by noise; at the same time, a depth model of time domain and spatial domain information fusion is proposed, Automatically capture the spatio-temporal characteristics of variable-length image sequences, and verify the proposed method on WiAR datasets

				and autonomously collected datasets. Experimental results show that the average recognition accuracy of the proposed method is 0.94 and 0.96, respectively, and has high accuracy and robustness in universal scenarios.
2	<p>Improving the Elementary Leftover Food Estimation Algorithm by Using Clustering Image Segmentation in Nutrition Intake Problem -</p> <p><a href="#">Yuita Arum Sari</a> Faculty of Computer Science, University of Brawijaya, Malang, Indonesia</p> <p><a href="#">Jaya Mahar Maligan</a> Agricultural Product Technology Dept., University of Brawijaya, Malang, Indonesia</p> <p><a href="#">Andriko Fajar Prakoso</a> Faculty of Computer Science, University of Brawijaya, Malang, Indonesia</p>	2020	Image Segmentation	we created a prototype named Smart Nutrition Box (SNB), which has several features to predict the leftover nutritional content of foods placed at the tray box. However, it has a drawback when recognizing the area of food in the compartment of the tray box by image segmentation. So, in this paper, we propose clustering-based image segmentation to reduce an error of counting the pixel-wised of the food area in the compartment of the tray box. The result shows that the cluster image segmentation achieves a higher 95.86% of reducing error than image thresholding segmentation algorithm in Elementary Leftover Food Estimation (EFLE), which can be seen from the comparison of RMSE value that declined from 158.49 to 6.56. It

				concludes that this proposed algorithm is sufficient to be applied to the nutrition intake problem.
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#### Reference:

<https://ieeexplore.ieee.org/document/9754018/>

<https://ieeexplore.ieee.org/document/9298005/>