AI-powered Nutrition Analyzer for Fitness Enthusiasts

Introduction:

Nutrition analyzer aims to use personal information about individuals or groups of individuals to deliver nutritional advice that, theoretically, would be more suitable than generic advice. Deep learning, a sub branch of Artificial Intelligence, has promise to aid in the development of predictive models that are suitable for analysing Nutrition. Using the prediction made by CNN to provide nutrition values of the food or fruits, that help fitness enthusiasts to track their daily nutrition intake to maintain a healthy life.

Literature Survey:

1. To recognize multiple fruits more accurately, the authors(**Pure-CNN: A Framework for Fruit Images Classification**) proposed a Pure Convolutional Neural Network (PCNN) with minimum number of parameters. The PCNN consists of 7 convolutional layers. Additionally, to reduce overfitting and taking average of whole feature maps we employed recently developed Global Average Pooling (GAP) layer that is verified to be very effective. They analysed classification performance using PCNN on recently introduced fruit-360 dataset. The experimental results of the 55244 color fruit images from the 81 categories, show that the PCNN achieved a classification accuracy of 98.88%. The paper presents a new approach to improve fruit image classification using PCNN with Global Average Pooling (GAP).

The highest classification accuracy of 98.88% was obtained when using PCNN with GAP layer. Thus this method can be used for both object recognition and multi-class image classification.