**ABSTRACT**

Obesity and being overweight have become growing concerns due to their association with many diseases, such as type II diabetes, several types of cancer and heart disease. Thus, obesity treatments have been the focus of a large number of recent studies. Because of these studies, researchers have found that the treatment of obesity and being overweight requires constant monitoring of the patient’s diet. One of the important steps in the success of healthy diet is measuring food intake each day. One of the challenges in obesity management studies is measuring daily food consumption for obese patients. Countless recent studies have suggested that using technology like smart phones may enhance the under-reporting issue in dietary intake consumption. In this thesis, we propose a Food Recognition System (FRS) for calories and nutrient values assumption. The user employs the built-in camera of the smart phone to take a picture of any food before and after eating. The system then processes and classifies the photographs to discover the kind of food, portion size and then uses the knowledge to estimate the quantity of calories within the food using decision tree. An essential step in the system as it is used to estimate and calculate the food volume and amount of calories in the image