**Introduction:**   
This report focuses upon the detection of skin and lung tumours by using the automated techniques. Skin cancer is the most common type of cancer and is further classified into two type non-melanoma which effects the first or the second layer of skin or melanoma which effects the third layer of skin and is life threatening. On the other hand lung cancer which is the leading cause of death is detected by a CT scan which detects the abnormalities in the structure of the lung. To further assist the radiologist, CAD and CADx technologies are used.

**Objective:**This report helps to classify cancer tumours using machine learning techniques based on image and computerized Tomography data. The project aims to develop the following:

1. A tumour segmentation algorithm
2. A machine learning/classification method for normal vs. cancerous images
3. A webserver implementing the proposed technique

Throughout the time different image processing techniques have been used some of which are hybrid method to detect skin lesions whereas for lung tumour techniques that are used are Gabor filter (to optimize border difference), watershed algorithm (region separation) and binarization (separate extracted region from lung structure).to distinguish between benign and malignant nodule in lung CT images artificial Neural Network and multivariate logistics regression was used. Later a new method with greater sensitivity was introduced known as MOSSE Filter and this is the method that we will stress upon. This technique applies correlation filter to detect skin lesion and lung tumour in CT images. Ideally filter, images and response are connected to one another by the equation r=f\*h but with other factors taken into consideration the final equation is 𝐻∗= Σ𝐺𝑖⨀𝐹𝑖∗/𝑖Σ𝐹𝑖∗⨀𝐹𝑖+𝜆

The nominator term is the sum of the correlation of all images fi and its corresponding targets gi. The first term in the denominator is the energy of the image fi. The dataset for the above equation in MOSSE correlation filter is collected from kitware platform and it contains 600 images and their corresponding targets. The performance of the filter is evaluated using jaccard index. To detect tumour in lung ct images, the images are combined to make a 3d image and then to detect a 3d nodule, 3d correlation filter is used thus the final equation is 𝐻∗= Σ𝐺𝑖⨀𝐹𝑖∗/𝑖Σ𝐹𝑖∗⨀𝐹𝑖+𝜆. Since this works in the toy environment so it means it will work in real also. Sometimes the linear MOSSE filter can fail to detect objects then kernelized correlation filters are required. It not only brings non linearity to the process but can perform on complex images where noise and misleading objects are involved.