**A**

**PROJECT REPORT**

**ON**

**“Lung Cancer Detection using Machine Learning”**

**SUBMITTED TO**

**SHIVAJIUNIVERSITY, KOLHAPUR**

**IN THE PARTIAL FULFILLMENT OF REQUIREMENT FOR THE AWARD OF DEGREE BACHELOR OF ENGINEERING IN COMPUTER SCIENCE AND ENGINEERING**

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**DKTE SOCIETY’S TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI**

**(AN AUTONOMOUS INSTITUTE)**

**ACCREDITED WITH ‘A+’ GRADE BY NAAC**

**An ISO 9001:2015 Certified**

**SHIVAJI UNIVERSITY KOLHAPUR**

**2018-2019**

**D.K.T.E.SOCIETY’S** **TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI**

**(AN AUTONOUMOUS INSTITUTE)**

**(A+ Grade Accreditation by NAAC)**

**(ISO 9001:2015 CERTIFIED)**

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**



**CERTIFICATE**

**THIS IS TO CERTIFY THAT, PROJECT WORK ENTITLED**

**“Lung Cancer Detection Using Machine Learning”**

**IS A BONAFIDE RECORD OF COLLEGE WORK CARRIED OUT IN THIS COLLEGE BY**

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**DECLARATION**

We hereby declare that, the project work report entitled “**Lung Cancer Detection using Machine Learning**” which is being submitted to D.K.T.E. Society’s Textile and Engineering Institute, Ichalkaranji, affiliated to Shivaji University, Kolhapur is in partial fulfillment of degree B.E.(CSE). It is a bonafide report of the work carried out by us. The material contained in this report has not been submitted to any university or institution for the award of any degree. Further, we declare that we have not violated any of the provisions under Copyright and Piracy / Cyber / IPR Act amended from time to time.

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Thank you,

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**ABSTRACT**

This project is supposed to be an open source. It is software system implementing lung cancer detection at early stage using image processing and machine learning algorithms.

This software gives us the direct result about if cancer is present or not. Different features are extracted from the input image and based on the calculations, result from the support vector machine is obtained as cancerous cells are present or not. The stages included in our project are pre-processing, segmentation, feature extraction and classification. In pre-processing the noise and blurriness of image removed. In segmentation the image is segmented using DWT techniques. The features extracted using GLCM matrix. The extracted features are Entropy, Co-relation, energy, contrast and Dissimilarities. SVM uses Hyperplane algorithm to detect whether the given image is ‘**Malignant**’ or ‘**Benign**’.

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