# CAPSTONE PROJECT WORK REPORT

## Phase -II

**BREAST CANCER DETECTION USING DEEP LEARNING**

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A report submitted in partial fulfilment of the degree of

### B.Sc Computer Science with Data Analytics

Under the supervision of

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**SCHOOL OF COMPUTER STUDIES**

## A.V.P. COLLEGE OF ARTS AND SCIENCE

**(Affiliated to Bharathiar University, Coimbatore) T.M.POONDI, TIRUPUR**

**OCTOBER 2024**

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Bonafide Work Done by

### G.G. GOKILA REG.NO:2228B0254



Dissertation submitted in partial fulfilment of the requirements for the award of Bharathiar University, Coimbatore-46.

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Submitted for the Viva-Voce Examination held on

**INTERNAL EXAMINER EXTERNAL EXAMINER**

**OCTOBER 2024**

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**G.G.GOKILA [REG.NO:2228B0254]**

**DECLARATION**

I hereby declare that this project work entitled **“BREAST CANCER DETECTION USING DEEP LEARNING”** submitted to Bharathiar University, Coimbatore for the award of Degree of the Bachelor of Computer Science with Data Analytics is a record of original work done By **Ms.G.G. GOKILA (REG.NO:2228B0254),**under the supervisions and guidance of **Ms.S.ANUSYA M.Sc., M.Phil.,** Assistant Professor, School of Computer Studies, A.V.P. College of Arts and Science, Tirupur and that this project work has not formed on the basis for the award of any Degree/Diploma/ Associate/Fellowship or similar title to any candidates of any university.

**Place: Date:**

Signature of Candidate

**G.G.GOKILA [REG.NO:2228B0254]**

### SYNOPSIS

The project entitled **“BREAST CANCER DETECTION USING DEEP LEARNING”** using tkinter as a front-end python as a back end. Breast cancer, the most prevalent cancer among women, demands early detection for improved survival rates. Deep learning, a powerful AI branch, emerges as a promising ally in this battle. This project delves into harnessing its potential for accurate breast cancer detection in medical images. By leveraging a vast dataset of labelled images (mammograms, MRIs), we aim to develop a deep learning model capable of pinpointing cancerous lesions. Convolutional Neural Networks (CNNs) or Recurrent Neural Networks (RNNs) are strong candidates for this task, excelling in image classification and segmentation. Rigorous training on the prepared data equips the model to recognize cancer signatures within the images. Its performance will be rigorously evaluated against traditional methods, using metrics like accuracy, sensitivity, and specificity. Unraveling the model's inner workings through interpretability techniques like saliency maps sheds light on its decision-making process, fostering trust and understanding. Beyond mere detection, we envision integrating this model into clinical workflows. Imagine it assisting radiologists in their diagnoses, leading to faster, more accurate results. This project strives to pave the way for such advancements, ultimately contributing to improved healthcare outcomes for countless women.

However, ethical considerations and potential biases inherent in AI models demand careful attention. Data privacy and security are paramount in handling sensitive medical images. Recognizing the limitations of deep learning and emphasizing the irreplaceable role of human expertise in clinical decision-making are crucial. This project stands as a stepping stone in the ongoing pursuit of improved breast cancer detection using deep learning. Continuous research and development hold the key to unlocking even greater accuracy and reliability, offering a brighter future for countless women battling this formidable disease.

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