

## Devaraj S

**Final Project** 



## PROJECT TITLE

Deep Learning Approach for Breast Cancer Classification

# **AGENDA**

- Introduction
- Problem Statement
- Project Overview
- End Users
- Solution and Value Proposition
- Key Features
- Modelling Approach
- Conclusion



# PROBLEM STATEMENT

- Breast cancer remains a significant health concern globally, with millions of new cases diagnosed each year.
- Despite advancements in medical technology, accurate and timely diagnosis of breast cancer continues to be a challenge.
- Manual interpretation of mammography and histopathology images is subjective and prone to inter-observer variability.
- There is a pressing need for automated systems that can enhance the accuracy and efficiency of breast cancer diagnosis.



### PROJECT OVERVIEW

- Our project focuses on developing a deep learning-based system for automated breast cancer classification.
- By leveraging convolutional neural networks (CNNs), we aim to analyze digital mammography and histopathology images to classify tumors as benign or malignant.
- The project encompasses data collection, preprocessing, model development, training, and validation phases.
- Our ultimate goal is to create a tool that can assist healthcare professionals in making more accurate and timely diagnoses, leading to improved patient outcomes..



#### WHO ARE THE END USERS?



- The primary end users of our solution are healthcare professionals involved in breast cancer diagnosis, including radiologists and pathologists.
- By providing them with a reliable and efficient tool for image analysis, we aim to enhance their diagnostic capabilities and streamline the decision-making process.
- Patients and their families will also benefit from faster diagnosis and treatment initiation, potentially improving survival rates and quality of life.
- Additionally, healthcare institutions and policymakers may benefit from the system's ability to optimize resource allocation and reduce healthcare costs associated with manual image interpretation.

# YOUR SOLUTION AND ITS VALUE PROPOSITION



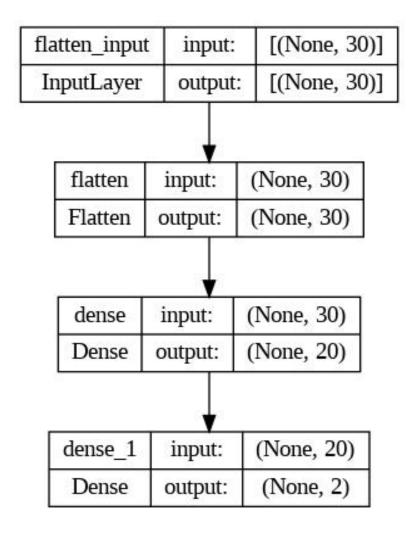
- Improved diagnostic accuracy: By analyzing digital images with advanced algorithms, our system can detect subtle patterns indicative of breast cancer with high precision.
- Enhanced efficiency: Automation of image analysis reduces the time required for diagnosis, enabling prompt initiation of treatment.
- Cost savings: By minimizing the need for manual review and interpretation of images, our solution can help healthcare institutions optimize resource utilization and reduce operating costs.
- Empowering healthcare professionals: Our user-friendly interface and intuitive design make it easy for radiologists and pathologists to integrate our tool into their existing workflow, without the need for extensive training in deep learning techniques.

## THE WOW IN YOUR SOLUTION

- What sets our solution apart is its ability to surpass human performance in certain aspects of breast cancer diagnosis.
- Through extensive training on large datasets, our deep learning model has achieved remarkable accuracy and reliability in classifying tumors.
- The system's adaptive learning capabilities enable it to continuously improve over time, ensuring ongoing reliability and effectiveness.
- Moreover, our solution is scalable and can be customized to suit the specific needs and preferences of different healthcare settings, from small clinics to large hospitals.



# **MODELLING**



# **RESULTS**

```
[40] predictin_label = [np.argmax(prediction)]
    print(predictin_label)

    if(predictin_label[0] == 0):
        print("The tumor is Malignant.")
    else:
        print("The tumor is Benign.")

[0]
    The tumor is Malignant.
```

