



Name: Nithish. C

Rejister No:962821205301

NM ID: aut962821205301

EMAIL:nithishnithish813@gmail.com

College Name: University College of Engineering Nagercoil

## Final Project



# PROJECT TITLE



## **Diabetes Prediction using Convolutional Neural Network (CNN)**



# AGENDA

- PROBLEM STATEMENT
- PROJECT OVERVIEW
- WHO ARE THE END USERS?
- YOUR SOLUTION AND ITS VALUE PROPOSITION
- THE WOW IN YOUR SOLUTION
- MODELLING
- RESULTS



# PROBLEM STATEMENT

Diabetes is a prevalent health issue affecting millions worldwide. Early detection and management are crucial for preventing complications. However, traditional diagnostic methods can be time-consuming and invasive, leading to delays in treatment.




# PROJECT OVERVIEW

- Our project aims to provide **a** user-friendly solution for diabetes prediction using Convolutional Neural Networks (CNNs).
- By leveraging machine learning techniques, we seek to offer a convenient and efficient way for individuals to assess their risk of diabetes based on various health indicators.



# WHO ARE THE END USERS?

- Individuals concerned about their  diabetes risk.
- Healthcare professionals seeking a supplementary tool for early diagnosis.
- Researchers interested in exploring innovative approaches to diabetes prediction.

# YOUR SOLUTION AND ITS VALUE PROPOSITION

Our solution involves developing a CNN-based model trained on a dataset containing relevant health parameters. The web application allows users to input their health data and receive an instant prediction regarding their likelihood of having diabetes. This approach offers several key benefits:

- **Convenience:** Users can access the prediction tool from any device with internet connectivity.
- **Accuracy:** The CNN model incorporates advanced machine learning techniques to provide accurate predictions.





# THE WOW IN YOUR SOLUTION

- **User-Friendly Interface:** The intuitive web interface makes it easy for individuals to input their data and receive predictions without any specialized knowledge.
- **Instantaneous Results:** Users receive instant predictions, eliminating the need for lengthy wait times associated with traditional diagnostic methods.
- **Accessible Anywhere:** Our web application is accessible from any device with internet access, ensuring widespread availability and convenience.





# MODELLING

- **Convolutional Neural Network (CNN):** We utilize a CNN architecture for its ability to effectively process sequential data and capture patterns within the input features.
- **Training Data:** The model is trained on a dataset containing information such as pregnancies, glucose levels, blood pressure, and other relevant health indicators.
- **Training Process:** The model is trained using the Adam optimizer and binary cross-entropy loss function, with accuracy as the evaluation metric.

# RESULTS



Diabetes Prediction

Pregnancies:  
1

Glucose:  
123

Blood Pressure:  
109

Skin Thickness:  
20

Insulin:  
87

BMI:  
27

Diabetes Pedigree Function:

Blood Pressure:  
109

Skin Thickness:  
20

Insulin:  
87

BMI:  
27

Diabetes Pedigree Function:  
3

Age:  
43

Predict

Prediction: No Diabetes, Probability: 0.36995893716812134



The background features a series of overlapping triangles in various shades of blue, ranging from light sky blue to deep navy blue, set against a white background. The triangles are arranged in a dynamic, geometric pattern that creates a sense of depth and movement, particularly on the right side of the image.

# Thank You