

A
Major Project Report
On
SepsisGuard: IOT-Enabled Real Time Sepsis Alert System

Submitted in partial fulfillment of the
Requirements for the award of the degree of

BACHELOR OF TECHNOLOGY

In
Computer Science & Engineering-
Artificial Intelligence & Machine Learning

Submitted By

CH.NEHANTH 21R21A6678

Under the guidance of

Mrs.T.ASWANI

Assistant Professor

Department of Computer Science and Engineering-Artificial Intelligence & Machine Learning



MLR

INSTITUTE OF TECHNOLOGY

(UGC AUTONOMOUS)

Affiliated to JNTUH, Approved by AICTE
Laxman Reddy Avenue, Dundigal, Hyderabad-500 043, Telangana, India



(Affiliated to Jawaharlal Nehru Technological University)

2021-2025

Department of Computer Science and Engineering-Artificial Intelligence & Machine Learning

CERTIFICATE

This is to certify that the project entitled **SepsisGuard: IOT-Enabled Real Time Sepsis Alert System** is being submitted by CH.Nehanth bearing 21R21A6678 I IV B.Tech II semester Computer Science and Engineering-Artificial Intelligence & Machine Learning is a record bonafide work carried out by them. The results embodied in this report have not been submitted to any other University for the award of any degree.

Internal Guide

Project-Coordinator

HOD CSE-AIML

External Examiner

Department of Computer Science and Engineering-Artificial Intelligence & Machine Learning

DECLARATION

I here by declare that the project entitled **SepsisGuard: IOT-Enabled Real Time Sepsis Alert System** is the work done during the period from August 2024 to May 2025 and is submitted in partial fulfillment of the requirements for the award of degree of Bachelor of Technology in Computer Science and Engineering- Artificial Intelligence & Machine Learning from Jawaharlal Nehru Technology University, Hyderabad. The results embodied in this project have not been submitted to any other university or Institution for the award of any degree or diploma.

CH.Nehanth

21R21A6678

Department of Computer Science and Engineering-Artificial Intelligence & Machine Learning

ACKNOWLEDGEMENT

The satisfaction and euphoria that accompany the successful completion of any task would be incomplete without the mention of people who made it possible, whose constant guidance and encouragement crowned our efforts with success. It is a pleasant aspect that we now have the opportunity to express our guidance for all of them.

First of all, I would like to express our deep gratitude towards our internal guide **Mrs.T.Aswani**, Assistant Professor, Computer Science and Engineering-Artificial Intelligence & Machine Learning for her support in the completion of our dissertation. We wish to express our sincere thanks to **Dr.K.Sai Prasad**, HOD, Department of Computer Science and Engineering-Artificial Intelligence & Machine Learning for providing the facilities to complete the dissertation.

I would like to thank all our Management, Principal, Project Coordinator, faculty and friends for their help and constructive criticism during the project period. Finally, we are very much indebted to our parents for their moral support and encouragement to achieve goals.

CH.Nehanth

21R21A6678

Department of Computer Science and Engineering-Artificial Intelligence & Machine Learning

ABSTRACT

Sepsis has become a life-threatening condition. As a result, early detection and therapy are essential to reverse the upward trend of death rates caused by septicemia. The current healthcare systems do not have good techniques for real-time monitoring and forecasting of sepsis development. The IoT-enabled system SepsisGuard fills this gap by linking wearable sensors to the cloud, followed by machine learning (ML) models which continue to monitor life-critical values like heart rate, temperature, and breathing even though in between times patients are not at more danger than usual. SepsisGuard is a complex healthcare technology used to detect and alert hospital medical support staff about sepsis cases early. This system features wearable IoT devices (Arduino-based sensors) that continuously track vital signs and patient data, a Python-based ML model running on a local system with serial communication, and a ThingSpeak cloud platform to assess the risk of sepsis using a Random Forest Machine Learning model. SepsisGuard offers features such as real-time analysis of patient data, improved accuracy, and effortless alerts delivered through mobile applications and web interfaces, ensuring that patients receive help from support and medical staff when needed.