

IOT Based Wheelchair Emergency Collapse Detection

A Project work submitted to Fatima College (Autonomous) affiliated to Madurai Kamaraj

University in partial fulfilment of the requirements for the

Degree of Bachelor of Science in Computer Science

Submitted by

R.MEENAKSHI (2021B31)



DEPARTMENT OF COMPUTER SCIENCE

FATIMA COLLEGE(Autonomous)

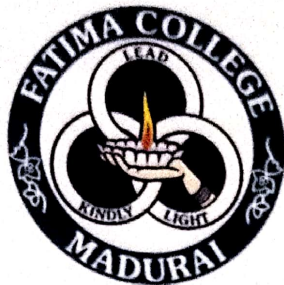
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March – 2024

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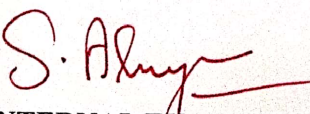
DEPARTMENT OF COMPUTER SCIENCE

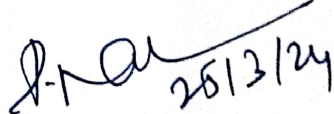


BONAFIDE CERTIFICATE

This is to certify that this project entitled “**IOT Based Wheelchair Emergency Collapse Detection**” is a bonafide record of the project work done by **R.MEENAKSHI (2021B31)** in partial fulfillment of the requirement for the award of the degree of **BACHELOR OF SCIENCE in COMPUTER SCIENCE**.

Submitted for the Viva – Voce Examination held on **25.03.2024**


INTERNAL EXAMINER


EXTERNAL EXAMINER

DECLARATION

I hereby declare that the project entitled "IOT Based Wheelchair Emergency Collapse Detection" is a project report of the original work done by me. This project work is submitted to Fatima College (Autonomous), Affiliated to Madurai Kamaraj University in partial fulfillment of the degree of Bachelor of Science in Computer Science during the academic year 2023-2024.

I declare that this project work or any part there of has not been submitted for getting any Degree or Diploma from any University or College.

Place: Madurai

Date: 25.03.2024

R. Meenakshi

Signature

R.MEENAKSHI (2021B31)

29th Feb, 2024

To
The Head of Department,
Department of Bachelor Of Computer Science,
Fatima College (Autonomous),
Madurai.

Dear Sir / Madam,

Sub: Completion for Project Work.

We are pleased to inform you that **Ms. Meenakshi R** (Reg. No: 2021B31), student of final year **Bachelor Of Computer Science** from "**Fatima College (Autonomous), Madurai**" has undergone training and guidance for the project titled "**IOT Based Wheelchair Emergency Collapse Detection**" from Nov 2023 to Feb 2024 on the Technology of Embedded Systems and IoT in our Organization. They completed his project work successfully with good conduct.

Thanking You,



M. Amarnath Karthic

Amarnath Karthic M - Director

Emb Buzz Technologies Private Limited

ABSTRACT

When it comes to old age, it becomes necessary to monitor our old ones for their health and safety. Due to weakness and weak joints, they have a great risk of falling down. Now it is important to know if an old age person has fallen so that he/she can be helped on time. Also, people on wheelchair need to be checked for fall detection.

For this purpose, we propose a smart collapse detection system. The system uses MEMs accelerometer to detect person movements, it can be mounted on persons hand or wheelchair for detection. The sensor is connected to a microcontroller in order to constantly transmit the acceleration data. Now the system keeps monitoring for fall detection and abrupt movement changes in person. A sudden abrupt change with jerk in the system is treated as a major collapse.

Now in case the person did not fall and alarm was false, the system allows to snooze the alert if person presses snooze button in 5 seconds. If person does not press the snooze, system detects person has fallen and automatically triggers alert and information will be shared through wifi connection to alert the loved ones or hospital representatives about the situation instantly.