VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama", Belagavi-560014, Karnataka

PROJECT REPORT ON

"EPILEPTIC SEIZURE DETECTION USING DEEP LEARNING"

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE PROJECT

BACHELOR OF ENGINEERING
IN
INFORMATION SCIENCE & ENGINEERING

Submitted By

H RANJITHA (1SV19IS005)
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Under the guidance of

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SHRIDEVI EDUCATION

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Department of Information Science and Engineering

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2022-2023

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ESTD 2002

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that, Internship project report of entitled "EPILEPTIC SEIZURES DETECTION USING DEEP LEARNING" has been successfully carried out by H RANJITHA[1SV19IS005],VAISHNAVICS[1SV19IS024],JOSHNIPS[1SV19IS007] , ABHISHEK V[1SV19IS001] in partial fulfillment for the project report of **Bachelor of Engineering** in **Information Science & Engineering** of the **Visvesvaraya Technological University, Belagavi** during the academic year **2022-23.** It is certified that all the corrections/suggestions indicated for internal assessments have been incorporated in the report. The Project report has been approved as it certifies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

Signature of Guide
Mr. Girish L
Assistant Professor,
Dept. of CSE,
SIET, Tumakuru.

Signature of H.O.D
Dr.Suhas G K BE.,M.Tech.,Phd
Associate Professor & HOD
Dept. of ISE,
SIET, Tumakuru.

Signature of Principal

Dr.Narendra Viswanath M.E., Ph.D., MIE, MISTE, MIWRA
Principal,
SIET, Tumakuru

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Name of the Examiners	Signature with date
1. Dr. Manoj Kumar DP	24/5/23
2. MERLIN. B	24/5/23

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ESTD: 2002
20 YEARS

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

DECLARATION

We, **H RANJITHA [1SV19IS005], VAISHNAVI C S [1SV19IS024],JOSHNI P S[1SV19IS007], ABHISHEK V[1SV19IS001]** student of VIII semester **B.E** in Information Science& Engineering, at Shridevi Institute of Engineering & Technology, Tumakuru, hereby declare that, the Project work entitled **"EPILEPTIC SEIZURE DETECTION USING DEEP LEARNING"**, embodies the report of our Project work carried out under the guidance of **Mr.Girish L, Assistant Professor, Department of CSE, SIET, Tumakuru** as partial fulfillment of requirements for the Project report in **Bachelor of Engineering in Information Science & Engineering of Visvesvaraya Technological University, Belagavi**, during the academic year **2022-23**. The Project has been approved as it satisfies the academic requirements in respect to the Project work.

Place: Tumakuru

Student Name & Signature

Date:

H RANJITHA [1SV19IS005] ..Ranjitha....
VAISHNAVI C S [1SV19IS024] ...Vaish...
JOSHNI P S [1SV19IS007] ..Joshni P S..
ABHISHEK V [1SV19IS001] ..Abhi.....

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Date: 22/05/2023

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Ms. H RANJITHA** bearing USN **1SV19IS005** Student of **Shridevi Institute of Engineering & Technology** has successfully completed her Project Work titled "Epileptic Seizure Detection Using Deep Learning".

We wish every success in her career.

For ShriTEK Innovations

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TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Ms. JOSHNI P S** bearing USN **1SV19IS007** Student of **Shridevi Institute of Engineering & Technology** has successfully completed her Project Work titled "Epileptic Seizure Detection Using Deep Learning".

We wish every success in her career.

For ShriTEK Innovations

Authorized Signature

ShriTEK Innovations Tumkur

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TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Mr. ABHISHEK V** bearing USN **1SV19IS001** Student of **Shridevi Institute of Engineering & Technology** has successfully completed his Project Work titled "Epileptic Seizure Detection Using Deep Learning".

We wish every success in his career.

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Epileptic Seizures Detection Using Deep Learning

CHAPTER 1

Abstract

By examining the brain signals generated by brain neurons, epilepsy can be identified as a dangerous chronic neurological illness. In order to create messages and interact with bodily organs, neurons are intricately coupled to one another. Electrocorticography (ECoG) and Electroencephalogram (EEG) media are frequently used to detect these brain impulses. These signals generate a large amount of data and are complicated, noisy, non-linear, and non-stationary. As a result, it is difficult to identify seizures and learn about knowledge relating to the brain. Without sacrificing performance, machine learning classifiers can classify EEG data, detect seizures, and highlight pertinent meaningful patterns. As a result, several researchers have created a variety of methods for seizure detection utilizing statistical characteristics and machine learning classifiers. The biggest difficulties lie in choosing the right classifiers and characteristics. This paper's goal is to provide an overview of the many different variations of these approaches over the past several years based on the taxonomy of statistical features and "black-box" and "non-black-box" machine learning classifiers. The cutting-edge techniques and concepts discussed will provide a thorough grasp of seizure detection, categorization, and future research prospects.

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