**TITLE OF THE PROJECT**

**CAPSTONE PROJECT REPORT**

**Submitted by**

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**in partial fulfillment for the award of the degree**

**of**

**BACHELOR OF TECHNOLOGY**

**IN**

**COMPUTER SCIENCE AND ENGINEERING**



**SCHOOL OF COMPUTING**

**COMPUTER SCIENCE AND ENGINEERING**

**KALASALINGAM ACADEMY OF RESEARCH**

**AND EDUCATION**

**KRISHNANKOIL 626 126**

November 2024

**DECLARATION**

We affirm that the project work titled **“A WEB BASED HEALTH CARE SYSTEM USING MACHINE LEARNING”** being submitted in partial fulfillment for the award of the degree of **Bachelor of Technology in Computer Science and Engineering** is the original work carried out by us. It has not formed part of any other project work submitted for the award of any degree or diploma, either in this or any other University.

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**BONAFIDE CERTIFICATE**

Certified that this project report **“A WEB BASED HEALTH CARE SYSTEM USING MACHINE LEARNING”** is the bonafide work of “N. SRI KRISHNA KOWSHIK (9921004491), N.YESHASWINI(99210041479),PV.GETTHIKAREDDY(99210041613),P.HARSHAD(99210041101)**”** who carried out the project work under my supervision.

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Submitted for the Project Viva-voce examination held on

**Internal Examiner External Examiner**

**ACKNOWLEDGEMENT**

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**SCHOOL OF COMPUTING**

**COMPUTER SCIENCE AND ENGINEERING**

**PROJECT SUMMARY**

|  |  |  |
| --- | --- | --- |
| Project Title | A Web Based Health Care System Using Machine Learning | |
| Project Team Members (Name with Register No) | N. Sri Krishna Kowshik – 9921004491  N. Yeshaswini – 99210041479  P.V. Geethika Reddy – 99210041613  P. Harshad - 99210041101 | |
| Guide Name/Designation | M M Sangeetha | |
| Program Concentration Area | Health Care | |
| Technical Requirements | Machine Learning, HTML, CSS, Flask Web Application | |
| Engineering standards and realistic constraints in these areas | | |
| **Area** | **Codes & Standards / Realistic Constraints** | **Tick** ✓ |
| Economic |  |  |
| Environmental |  |  |
| Social |  |  |
| Ethical |  |  |
| Health and Safety |  |  |
| Manufacturability |  |  |
| Sustainability |  |  |

**ABSTRACT**

This study provides the development and implementation of a comprehensive web-based healthcare system that leverages machine learning to improve the diagnosis, treatment, and management of a wide range of health conditions. Machine learning is used in this web-based healthcare system to enhance the diagnosis, management, and treatment of a number of medical disorders. By combining previous medical records, real-time patient data, and prediction algorithms, it provides tailored insights and treatment suggestions, promoting effective and easily accessible healthcare. Machine learning models, such as supervised learning for diagnosis and natural language processing (NLP) for processing unstructured data like doctor's notes, are powered by data from sources like electronic health records (EHRs), wearable technology, and Internet of Things-enabled health monitors. A real-time symptom checker, illness risk prediction, and tailored therapy suggestions based on lifestyle, health history, and present symptoms are some of its key features. It serves as a clinical decision support tool for medical professionals, offering data-driven insights and a thorough perspective of patient data to help with well-informed decision making. This approach improves patient care, early detection, and patient engagement, and healthcare quality.

Keywords:

Diagnosis support, Treatment recommendations, Real-time patient data, Electronic health records (EHR), Symptom checker, Personalized healthcare, Clinical decision support tool.

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**CHAPTER – I**

**INTRODUCTION**

* 1. **Background and Motivation**

This project introduces a web-based healthcare platform that leverages machine learning to improve diagnostic, monitoring, and engagement functions, addressing the need for accessible, accurate, and efficient healthcare services. By focusing on disease prediction, brain tumour detection, and chronic condition monitoring, it aims to overcome the limitations of traditional diagnostics, which can be hindered by accessibility and specialist availability. The platform enables patients to input symptoms, upload MRI scans, track health metrics, and schedule appointments, creating a user-friendly and comprehensive healthcare experience. Ultimately, it empowers patients, supports early intervention, reduces provider burden, and enhances overall healthcare efficiency and outcomes.

* 1. **Problem Statement**

Many people struggle to maintain regular health check-ups and access timely medical advice due to busy schedules and overwhelming online health information. This results in delayed detection of health issues and inadequate preventive care. A solution is needed to analyze users' health data to predict risks, provide timely advice, and suggest appropriate doctors. This would enable proactive health management, reduce healthcare burdens, and improve overall outcomes through early interventions.

* 1. **Objective of the Project**

Developing an AI-driven healthcare prediction and doctor suggestion feature within the mobile app, aimed at improving patient outcomes by providing personalized health insights and recommendations.

The system will analyze user health data to predict potential health issues, offer preventive advice, and suggest appropriate medical specialists for consultation, enhancing accessibility and quality of healthcare.

**1.4 Scope of the Project**

Symptom Analysis and Disease Prediction:

Patients will be able to input symptoms, and the system will analyse them to predict potential diseases, facilitating early detection and proactive health management.

Medical Imaging Analysis for Brain Tumours:

The platform will allow patients to upload MRI scans, with machine learning models assisting in identifying potential brain tumours, aiming for quicker diagnoses in critical cases.

Chronic Condition Monitoring:

The platform will include tracking features for health metrics, such as blood pressure and other vital signs, enabling continuous monitoring for chronic condition management.

Appointment Scheduling System:

An integrated appointment scheduling tool will allow patients to easily arrange consultations, ensuring timely access to healthcare providers.

**CHAPTER-II**

**LITERATURE REVIEW**

**CONCLUSION & FUTURE SCOPE**

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**INTERNAL QUALITY ASSURANCE CELL**

**PROJECT AUDIT REPORT**

This is to certify that the project work entitled “**A WEB BASED HEALTH CARE SYSTEM USING MACHINE LEARNING**” categorized as an internal project done by N SRI KRISHNA KOWSHIK, N YESHASWINI, PV GEETHIKA REDDY, P HARSHAD of the Department of Computer Science and Engineering, under the guidance of GUIDE NAME during the Even semester of the academic year 2023 - 2024 are as per the quality guidelines specified by IQAC.

**Quality Grade**

**Deputy Dean (IQAC)**

**Administrative Quality Assurance Dean (IQAC)**