# VISVESVARAYA TECHNOLOGICAL UNIVERSITY



# Jnana Sangama, Belagavi - 590018

**Project Report**

**On**

# “HHHHHHHHHHHHHHHHHHHHHHHHHHH”

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

## BACHELOR OF ENGINEERING

**In**

## ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

**By**

|  |  |
| --- | --- |
| **Sampreeth R Naik** | **4MT21AI044** |
| **Abhiram RS** | **4MT22AI400** |
| **Sujan Shetty** | **4MT20AI055** |
| **Sharan Shetty** | **4MT22AI406** |

### Under the Guidance of Dr. Maryjo M George Assistant Professor Department of AI & ML

**DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING**

## MANGALORE INSTITUTE OF TECHNOLOGY & ENGINEERING

(A Unit of Rajalaxmi Education Trust®, Mangalore)

Autonomous Institute affiliated to VTU, Belagavi, Approved by AICTE, New Delhi

Accredited by NAAC with A+ Grade & ISO 9001:2015 Certified Institution

2024-25

## MANGALORE INSTITUTE OF TECHNOLOGY & ENGINEERING



(A Unit of Rajalaxmi Education Trust®, Mangalore)

Autonomous Institute affiliated to VTU, Belagavi, Approved by AICTE, New Delhi

Accredited by NAAC with A+ Grade & ISO 9001:2015 Certified Institution

**DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING**

# CERTIFICATE

This is to certify that the mini project work entitled **“YOUTUBE SENTIMENT ANALYSIS”** is a Bonafede work carried out by **Sampreeth R Naik (4MT21AI044), Abhiram RS (4MT22AI400), Sujan Shetty (4MT20AI055), Sharan Shetty (4MT22AI406)** in partial fulfillment for the award of degree of Bachelor of Engineering in Artificial Intelligence and Machine Learning Of the **Visvesvaraya Technological University, Belagavi during the year 2024–25**. It is certified that all corrections and suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The mini project has been approved as it satisfies the academic requirements in respect of mini project work prescribed for the Bachelor of Engineering degree.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Dr. Maryjo M George** |  | **Mr. Sunil Kumar S** |  | **Dr. Prasanth C M** |
| Project Guide |  | Head of the Department |  | Principal |

External Examiners

Name of the Examiners Signature with Date

1.

2.

# ABSTRACT

**BACKGROUND:** Blood transfusion is a critical medical procedure that requires accurate and timely determination of blood groups to ensure patient safety. Traditional methods of blood group determination involve chemical reagents and laboratory-based testing, which can be time-consuming, labor-intensive, and prone to errors. The increasing demand for efficient and rapid blood group detection in emergency situations and remote areas emphasizes the need for an innovative approach using advanced technologies.**OBJECTIVE:** The prime objective of the proposed work is to develop a fingerprint-based blood group prediction system using deep learning models. This system aims to leverage fingerprint patterns and their correlation with blood group prediction to provide a fast, non-invasive, and efficient alternative to conventional blood group testing.**METHODS:** In this work, fingerprint images are acquired using IoT-enabled fingerprint sensors. The system adopts image processing techniques and convolutional neural network (CNN) models to analyze fingerprint patterns and predict blood groups. Several CNN architectures, including LeNet, AlexNet, customized AlexNet, and GoogLeNet, are implemented and optimized with hyperparameter tuning for better prediction accuracy.**RESULTS:** The accuracy of the proposed system was experimentally evaluated, and the empirical results demonstrated its reliability in predicting blood groups. Performance analysis of various CNN models was conducted with hyperparameter variations on the fingerprint dataset. Among the models, GoogLeNet achieved the highest validation accuracy of 96%. The trained GoogLeNet model was utilized for blood group prediction, and the predicted results were found to align with standard laboratory test outcomes.**SIGNIFICANCE:** The successful implementation of the proposed system highlights its potential for widespread adoption in medical diagnostics and emergency scenarios. By providing a non-invasive and rapid blood group determination method, the system reduces dependency on chemical reagents and laboratory infrastructure. Additionally, it enhances accessibility to blood group testing in remote or resource-constrained settings, thereby supporting timely medical interventions. The proposed system is expected to contribute significantly to the field of precision medicine and improve healthcare delivery efficiency.

# ACKNOWLEDGEMENT

The satisfaction and the successful completion of this project would be incomplete without the mention of the people who made it possible, whose constant guidance and encouragement crowned our efforts with success.

This mini project is made under the guidance of **Dr. Maryjo M George, Assistant Professor, Department of Artificial Intelligence & Machine Learning**. We would like to express our sincere gratitude to our guide for all the helping hand and guidance in this mini project.

We would like to express appreciation to **Mr. Sunil Kumar S**, Head Department of Artificial Intelligence and Machine Learning for his support and guidance.

We would like to thank our Principal **Dr. Prashanth C M**, for encouraging us and giving us an opportunity to accomplish the mini project.

We also thank our management who helped us directly or indirectly in the completion of this mini project.

Our special thanks to faculty members and others for their constant help and support. Above all, we extend our sincere gratitude to our parents and friends for their constant encouragement with moral support.

|  |  |
| --- | --- |
| **Sampreeth R Naik** | **(4MT21AI044)** |
| **Abhiram RS** | **(4MT22AI400)** |
| **Sujan Shetty** | **(4MT20AI055)** |
| **Sharan Shetty** | **(4MT22AI406)** |