VISVESVARAYA TECHNOLOGICAL UNIVERSITY,

BELAGAVI

A PROJECT REPORT ON

"A Machine Learning Based Application To Help People Track Their Carbon Footprint"

Submitted in partial fulfillment for the award of Degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE & ENGINEERING

By

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CERTIFICATE

This is to certify that the project entitled **"A Machine Learning Based Application To Help People Track Their Carbon Footprint"** has been successfully completed by

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the Bonafede students of **DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING, ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY** ofthe **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2023–24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

13/5/24

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ABSTRACT

Empowering Environmental Consciousness, this project aims to develop an innovative mobile application designed to assist individuals in tracking their carbon footprint and fostering proactive contributions to environmental preservation. While some of the applications disadvantages such as not effective location tracking, user have to give the input in terms of distance travelled manually and user have to choose the mode of transportation, this is an inefficient method of tracking the carbon footprint of an individual, this application has a upper hand in dealing with these disadvantages. This mobile application is integrated with the Global Positioning System (GPS) which is an Application Programming Interface (API) provide by GoogleAPI Services, this effectively track the user location based on longitude and latitude and this application makes use of mobile sensors such as Gyroscope, Accelerometer, Magnetic Field for sensing the motion of the user. This application is also integrated with Machine Learning (ML) Algorithm which is implemented over gradient decision tree model that is Xgboost which helps the application to detect the type of transportation mode more efficiently by using the concept of parallelization and node pruning by which the results are obtained much faster. After the transportation mode detected the calculation is done and presented on the charts that is spinner and line chart to visually see the amount of carbon emitted and provide ways to reduce the emission. Through interactive features and real-time data analysis, users gain actionable insights to reduce their carbon footprint effectively. Moreover, the application facilitates community engagement by enabling users to participate in collective environmental initiatives and share sustainable practices. With a focus on accessibility and education, our project strives to empower individuals to make informed decisions, leading to tangible positive impacts on the environment.