

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**"Jnana Sangama" Belagavi – 590 018**



**PROJECT REPORT ON**  
**“Wi-Fi MODULE BASED VEGETABLE PLUCKING**  
**ROBOT”**

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

**BACHELOR OF ENGINEERING**  
**IN**  
**ELECTRONICS & COMMUNICATION ENGINEERING**

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**ALVA'S**  
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**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY**

**A+, Accredited by NAAC & NBA (ECE & CSE)**

**MOODBIDRI – 574 225.**

**2022-2023**

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**(Affiliated to VTU, BELAGAVI)**

**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**CERTIFICATE**

*Certified that the project work entitled “Wi-Fi MODULE BASED VEGETABLE PLUCKING ROBOT” is a bona fide work carried out by*

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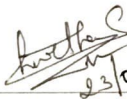
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in partial fulfillment for the award of **BACHELOR OF ENGINEERING** in **ELECTRONICS & COMMUNICATION ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2022–2023. It is certified that all corrections/suggestions 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.

  
23/05/2023

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## ABSTRACT

In general all know that Agricultural plays a chief role in Economy, as well as it is the backbone of economic system for developing countries. The agriculture industry has many problems, including the decreasing number of farm workers and increasing cost of Manual vegetable harvesting (plucking). Saving labor and scale up in agriculture is necessary in solving these problems. However, much of the work in the field of vegetable harvesting is manually done. This report proposes a Wi-Fi module based vegetable plucking robot that can automate the process of picking vegetables from a farm or garden. The robot is equipped with a Wi-Fi module that enables it to connect to a mobile device or a computer for remote control. The robot is also equipped with a camera that captures images of the vegetables, which are processed by an image processing algorithm to determine the position and orientation of each vegetable. The robot uses an arm to pluck the vegetables and places them in the basket. The entire process is controlled using a microcontroller, which is programmed using Python programming language. The proposed system can improve the efficiency of vegetable harvesting, reduce labour costs, and increase the quality of the harvested vegetables.

The proposed system was tested in a real-world scenario, and the results showed that the robot was able to detect and pluck the vegetables. The Wi-Fi module enabled remote control of the robot, which allowed the operator to adjust the position of the robot. The image processing algorithm was able to detect the vegetables, which ensured that only the ripe vegetables were harvested. The proposed system is easy to operate, and its modular design allows for easy customization and scaling. Overall, the Wi-Fi module based vegetable plucking robot can be a valuable tool for farmers and gardeners, and it has the potential to revolutionize the agriculture industry.