

LEAF DISEASE DETECTION USING MATLAB AND MULTISVM

*A project report submitted in partial fulfillment of the Academic requirements
for the award of the Degree of*

BACHELOR OF ENGINEERING

in

INFORMATION TECHNOLOGY

By

N.Shalini Reddy 2451-16-737-002

A.Jyothi 2451-16-737-008

K.Vinay Kumar 2451-16-737-009

Under the guidance of

K.Devaki

Assistant Professor, Dept. of IT



DEPARTMENT OF INFORMATION TECHNOLOGY

MATURI VENKATA SUBBA RAO ENGINEERING COLLEGE

(Affiliated to Osmania University, Hyderabad. Recognized by AICTE)

Nadergul, Saroornagar Mandal, Hyderabad-501510

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CERTIFICATE

This is to certify that the project entitled, **“LEAF DISEASE DETECTION USING MATLAB AND MULTISVM”** is being submitted by **N.SHALINI REDDY [Roll No. 2451-16-737-002]**, **A.JYOTHI[Roll No. 2451-16-737-008]**, and **K.VINAY KUMAR[Roll No. 2451-16-737-009]** in partial fulfillment of the academic requirements for the award of the degree of Bachelor of Engineering in Information Technology to the Osmania University, is a record of bona fide work carried out by him under my guidance and supervision. The results obtained in the project have not been submitted to any other industry or institute for the award of any degree.

Internal Guide

Head of the Department

ACKNOWLEDGEMENT

We with extreme jubilation and deepest gratitude, would like to thank K.Devaki, Assistant Professor, Department of Information Technology, MVSR Engineering College, for her constant encouragement and facilities provided to us to complete our project in time.

With immense pleasure, we record our deep sense of gratitude to our beloved Head of the department Mr. V. Ashwini Kumar, Department of Information Technology, MVSR Engineering College, for permitting us to carry out this project.

We are sincerely thankful to Dr. G.Kanaka Durga, Principal, M V S R Engineering College for her inspiration, continuous support and facilities provided us to do this project.

We would like to extend our gratitude to Dr.Ch.Samson, Associate Professor, Department of Information Technology, M V S R Engineering College, for his valuable suggestions and timely help during the course of the project.

We express, from the bottom of my heart, my deepest gratitude to my parents and family for the support, dedication, comprehension and love.

Finally, we express our heartfelt thanks to each and everyone who directly and indirectly helped us in successful completion of this project work.

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K.Vinay Kumar [2451-16-737-009]

DEPARTMENT OF INFORMATION TECHNOLOGY

Vision of the Department:

To impart technical education producing competent and socially responsible engineering professionals in the field of Information Technology.

Mission of the Department:

M1. To make teaching learning process effective and stimulating.

M2. To provide adequate fundamental knowledge of sciences and Information Technology with positive attitude.

M3. To create an environment that enhances skills and technologies required for industry.

M4. To encourage creativity and innovation for solving real world problems.

M5. To cultivate professional ethics in students and inculcate a sense of responsibility towards society

Program Educational Objectives:

After 3 to 4 years of graduation, graduates of the Information Technology program will:

- I. Apply knowledge of mathematics and Information Technology to analyze, design and implement solutions for real world problems in core or in multidisciplinary areas.
- II. Communicate effectively, work in a team, practice professional ethics and apply knowledge of computing technologies for societal development.
- III. Engage in Professional development or postgraduate education to be a life-long learner.

PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs):

(13) **Hardware design:** An ability to analyze, design, simulate and implement computer hardware / software and use basic analog/digital circuits, VLSI design for various computing and communication system applications.

(14) **Software design:** An ability to analyze a problem, design algorithm, identify and define the computing requirements appropriate to its solution and implement the same.

Project Course Objectives

- To enhance practical and professional skills.
- To familiarize tools and techniques of systematic literature survey and documentation
- To expose the students to industry practices and team work.
- To encourage students to work with innovative and entrepreneurial ideas

Project Course Outcomes

1. Identify a project topic in Information Technology of societal interest after surveying.
2. Analyse requirements and feasibility to implement the project.
3. Design the project in hardware and/or software.
4. Develop, implement and test the project/ model / prototype.
5. Demonstrate effective written and oral communication skills.

ABSTRACT

Agricultural productivity is something on which economy highly depends. This is the one of the reasons that disease detection in plants plays an important role in agriculture field, as having disease in plants are quite natural. If proper care is not taken in this area then it causes serious effects on plants and due to which respective product quality, quantity or productivity is affected. For instance a disease named little leaf disease is a hazardous disease found in pine trees in United States. Detection of plant disease through some automatic technique is beneficial as it reduces a large work of monitoring in big farms of crops, and at very early stage itself it detects the symptoms of diseases i.e. when they appear on plant leaves. The proposed scheme is based on the image processing technique using matlab. Earlier linear support vector machine was used to identify single diseases. Our proposed algorithm uses multi support vector machine that identifies many diseases and thereby increasing the efficiency and productivity of the plants.

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