SRM INSTITUTE OF SCIENCE & TECHNOLOGY

Department of Computing Technologies, Faculty of Engineering and Technology

Final Year Minor Project/Internship Evaluation Form

Academic Year 2023-24

Degree Programme	B.Tech				Type of Project work (Multi selection permitted)						
Campus	KTR				Bio Project		Fabrication Project				
REMARKS, If any :			Batch ID:		Chemical Project		Industry Project / Internship				
			B-315		Design / Simulation Project		Software Project	✓			
					Experimental / Testing Project						

	1	2	3	4	5	6
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	1	2	3	4	5	6

In case the explanation doesn't fit within the given space, you may either merge the cells or attach separate sheet

Q1: What is the novelty of the project?	**The novelty of the project "A Comprehensive Study on Leaf Disease Prediction Using Artificial Intelligence and Deep Neural Networks" lies in its pioneering application of AI and deep learning to revolutionize plant disease identification in agriculture, particularly in India. It introduces innovative solutions that offer early disease detection, aligning with the concept of precision agriculture sustainable farming, and improved operational efficiency. The project combines advanced technology with a user-friendly interface, transcending barriers for farmers, regardless of their technological proficiency. Its global relevance is undeniable, as it addresses pressing agricultural challenges and offers a blueprint for leveraging technology to ensure food security, environmental sustainability, and economic growth.**
Q2: Which Dataset is used in the project?	**For this experiment, Sharada P. Mohanty et al PlantVillage public dataset for plant leaf disease identification was employed. The dataset comprises 87 000 RGB photos of healthy and diseased plants split into 38 groups of leaves. Out of which We decide to use 15,000 Images in the ratio of 80% training to 20% validation split. We have chosen 7 classes to determine the plant dieseases.**
Q3: Justify the need for the project?	**This project is profoundly significant as it tackles the urgent need to ensure food security, reduce labor-intensive disease identification methods, minimize environmental impact from pesticide use, enhance the economic viability of farming, and promote inclusivity in technology adoption. With the ability to detect plant diseases early and accurately, this project represents a vital step towardssustainable and efficient agriculture in India. It addresses critical challenges faced by farmers, benefits the environment, and contributes to the economic well-being of millions while aligning with the principles of precision agriculture and promoting safe and environmentally friendly farming practices.**
Q4: What are the key technologies and methodologies employed in the project for plant disease prediction?	**The key technologies and methodologies employed in this project for plant disease prediction include the integration of Artificial Intelligence (AI) and deep neural networks. AI technology, in the form of AI-based sensors, continuously monitors plant health, collecting data on various metrics such as temperature, humidity, and soil moisture levels. Deep neural networks are used to analyze this data, leveraging machine learning techniques to detect and predict plant diseases. These neural networks are trained on a dataset of images or time-series data, allowing them to identify patterns and anomalies indicative of disease presence. The project also utilizes image processing techniques to extract valuable information from leaf images, such as color, extent of damage, leaf area, and textural attributes. The combination of AI, deep learning, and image analysis provides a powerful and accurate methodology for plant disease prediction, allowing farmers to take timely preventive actions and improve agricultural practices.**
Q5: How does the project contribute to sustainable farming practices and minimize environmental impact?	**The project significantly contributes to sustainable farming practices and minimizes environmental impact in several ways. By enabling early disease detection through AI-based monitoring, it reduces the need for extensive pesticide and chemical usage, thus minimizing their negative environmental effects. This not only preserves the natural ecology and biodiversity but also enhances the well-being of agricultural workers and local populations. Additionally, the project supports resource-efficient agriculture by providing real-time data for informed decision-making, helping farmers optimize water, fertilizer, and other inputs. This reduces resource waste and promotes eco-friendly practices.**