DEPARTMENT OF APEX INSTITUTE OF TECHNOLOGY

# PROJECT PROPOSAL

## Project Title: -

A Hybrid Deep Learning Approach to Convolutional Neural Networks for Potato Leaf and Rice Disease Detection

## Project Scope: -

The scope of the project "A Hybrid Deep Learning Approach to Convolutional Neural Networks for Potato Leaf and Rice Disease Detection" involves leveraging advanced deep learning techniques to identify and diagnose diseases in potato leaves and rice crops. The project integrates hybrid approaches and convolutional neural networks (CNNs) to enhance the accuracy and efficiency of disease detection. By analyzing datasets of infected and healthy crop images, the model will identify patterns and symptoms specific to diseases affecting potato leaves and rice crops.

The project will aim to create a scalable and efficient system that supports early detection of diseases, thereby enabling timely interventions and reducing crop loss. Additionally, this system will assist farmers and agricultural stakeholders by providing actionable insights to improve crop management practices. The methodology includes data preprocessing, feature extraction using CNN, and hybrid model optimization to achieve high precision in disease classification. The approach will consider diverse environmental conditions and disease variations, ensuring robustness and applicability across various agricultural contexts. Ethical considerations such as data integrity and compliance with agricultural policies will be upheld. Collaboration with agricultural experts and data scientists will ensure that the insights are accurate and actionable, leading to a sustainable and impactful solution for the agricultural sector.

## 3. Requirements: -

* Hardware Requirements

1. Windows 11

* Software Requirements

1.NIL

**STUDENTS DETAILS**

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| **Name** | **UID** | **Signature** |
| **Manav Kakkar** | 21BCS6294 |  |
| **Meenakshi Yadav** | 21BCS6048 |  |

**APPROVAL AND AUTHORITY TO PROCEED**

We approve the project as described above and authorize the team to proceed.

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| Name | **Title** | **Signature**  **(With Date)** |
| **Dr.Priyanka Kaushik** | **Head of Department(AIT-CSE)** |  |