**Step 1 :**

**Dataset to be considered**

* Paddy pest and disease dataset
* Environmental parameters (Weather and climate), soil dataset
* Pathogenic development stage
* Paddy pest and disease information need to be extracted from TNAU Agritech portal website and other government sites
* Based on weather, soil conditions and ETL value of each pathogen prediction is to be done

**Step 2 :**

* Preprocessing
* For dimensionality reduction – (PCA / LDA)

**Step 3 :**

* **Contribution I – Proposed Machine learning algorithm**
  + Data to be considered : Climatic condition for paddy pest / disease, growth stage, paddy pest and disease symptoms (primary, secondary, tertiary), historical data, ETL value pest and disease
  + Performance evaluation
  + Comparison with existing machine learning algorithms
* **Contribution II – Proposed Machine learning algorithm**
  + support vector machine classifier to identify crop–weather–disease relations for paddy crops
  + Performance evaluation
  + Comparison with existing machine learning algorithms
* **Contribution III** 
  + LSTM based convolutional neural network employed for prediction process where the CNN will be enhanced by integrating optimization approach.
  + To train the classification model multiclass SVM
  + Performance analysis
  + Comparison with existing machine learning algorithms

**Step 4:**

The performance of the method evaluated based upon the metrics,

* Accuracy
* Precision
* Specificity
* Sensitivity
* In case of hybrid algorithm complexity of algorithm should be calculated

**Step 5:**

Comparisons are done with some existing method to prove the effectiveness of the proposed approach.