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| **Decisions**  Predict the category of foliar disease in Apple leaves  Help farmers reduce the spread of diseases | **ML Task**  Identification of the type of disease would help farmers take the right steps to mitigate the problem are stop the spread.  Will save costs as misdiagnosis results in use of incorrect pesticides and chemicals, which in turn cause further damage  Input: Image of apple leaf  Output: Infected(type) or not | **Value Proposition**   * Cost savings (Industry is worth $15 billion) * Millions of $ are lost due to insects and diseases * Environment friendly * Solve Supply chain issues | **Data Sources**  Came across the project from Kaggle, but was taken from the peer reviewed research project | **Collecting Data**  Labelled dataset is taken from a peer  reviewed research project.  <https://bsapubs.onlinelibrary.wiley.com/doi/10.1002/aps3.11390> |
| **Features**  Use of various data augmentation techniques to increase dataset  Features automatically extracted by the CNN |
| **Making Predictions**  Deploy on a mobile application for ease of use  Maybe have a robot which goes around taking pictures of leaves and evaluating them? | **Offline Evaluations**  Time it takes to process the image (depending on where it is deployed- phone or cloud)  Precision  Recall  Confusion Matrix  AUC-ROC | **Building Models**  Custom CNN – Sequential model API  Custom CNN with data augmentation  Transfer Learning (Inception) |
| **Live Evaluation and Monitoring**  We could test it with actual apple leaves which are infected  Have an expert verify whether the prediction was correct or not | | |