COMPARATIVE STUDY BETWEEN DIFFERENT ARCHITECTURE OF CNN FOR POTATO DISEASES CLASSIFICATION

TEAM 4
BEHAVIOUR OF MODEL

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Outline

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LEARNING CURVE

DEFINATION

A learning curve is just a plot showing the progress over the experience of a specific metric related to learning during the training of a machine learning model. They are just a mathematical representation of the learning process.

It is used to detect model behaviour.

- Underfit Model
- Overfit Model
- GoodFit Model

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TRAINING LOSS

- The training loss is a metric used to assess how a deep learning model fits the training data.
- That is to say, it assesses the error of the model on the training set. Note that, the training set is a portion of a dataset used to initially train the model. Computationally, the training loss is calculated by taking the sum of errors for each example in the training set.
- It is also important to note that the training loss is measured after each batch. This is usually visualized by plotting a curve of the training loss.

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VALIDATION LOSS

- validation loss is a metric used to assess the performance of a deep learning model on the validation set.
- The validation set is a portion of the dataset set aside to validate the performance of the model. The validation loss is similar to the training loss and is calculated from a sum of the errors for each example in the validation set.
- Additionally, the validation loss is measured after each epoch. This informs us as to whether the model needs further tuning or adjustments or not. To do this, we usually plot a learning curve for the validation loss

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IMPLICATIONS OF TRAINING AND VALIDATION LOSS

The training and validation loss is usually visualized together on a graph. The purpose of this is to diagnose the model's performance.
Now we will explain Model behaviour:

1. Under Fit Model
2. Over Fit Model
3. Good Fit Model

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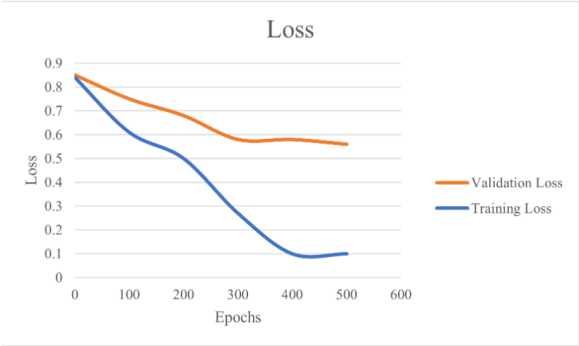
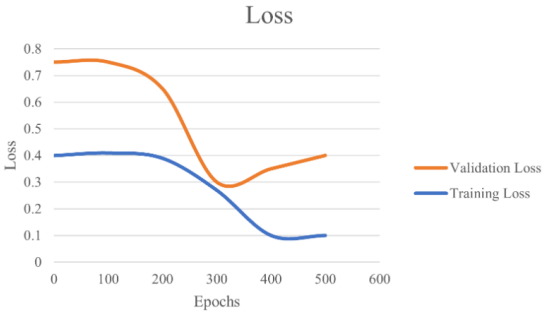
MODEL BEHAVIOR

- Underfitting
  When the algorithm is not able to model either training data or new data, consistently obtaining high error values that don't decrease over time



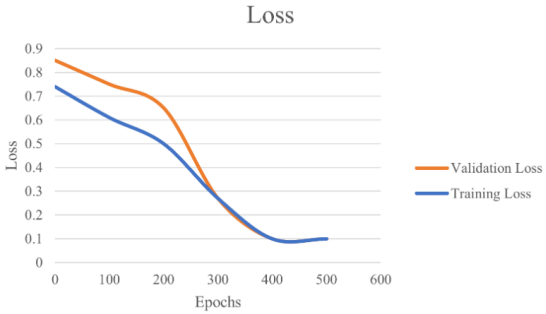
MODEL BEHAVIOR

- Overfitting
  The algorithm captures well the training data, but it performs poorly on new data, so it's not able to generalize



MODEL BEHAVIOR

- GoodFit
  The algorithm captures well on training data, and also it performs good on new data, so it's able to generalize



THANK YOU