

IEEE GUIDED PROJECT

**IMPLEMENTAION OF
DETECTION OF COVID 19
USING PRE COVID DATA**

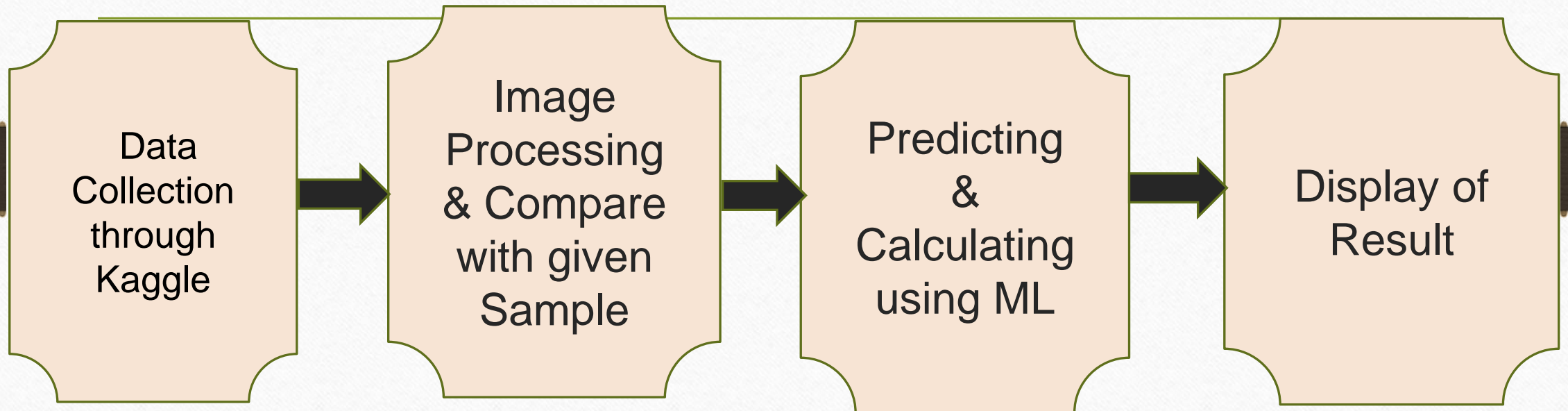
GROUP NO:09

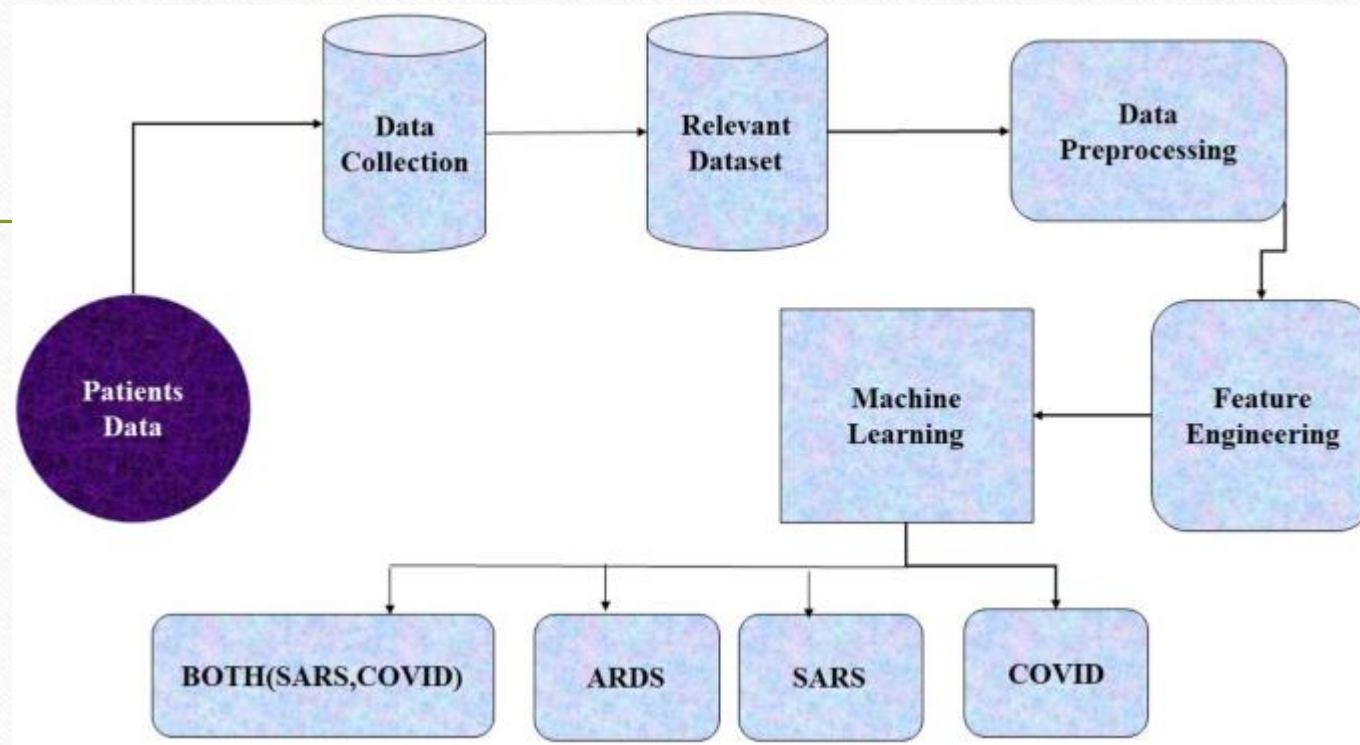
INTRODUCTION

- Rapid and accurate detection of COVID-19 coronavirus is necessity of time to prevent and control of this pandemic by timely quarantine and medical treatment in absence of any vaccine.
- Therefore, an alternative diagnostic tool to detect COVID-19 cases utilizing available resources such as Image Processing and advanced deep learning techniques is proposed in this work
- The proposed method is implemented in four phases, viz., data collection through Kaggle, Image Processing & Compare with given Sample, predicting and calculating using ML, display of result.

SR NO	TITLE	AUTHOR	PUBLICATION	DATA SET
1	A deep learning approach to detect Covid-19 coronavirus with X-Ray images	<u>Govardhan Jain</u> <u>Deepti Mittal</u> , <u>Daksh Thakur</u> , Madhup <u>K. Mittal</u>	NCIB	Open source from Cohen and Kaggle
2	Machine learning based approaches for detecting COVID-19 using clinical text data	<u>Akib Mohi Ud Din</u> <u>Khanday</u> , <u>Syed Tanzeel</u> <u>Rabani</u> , <u>Qamar Rayees</u> <u>Khan</u> , <u>Nusrat Rouf &</u> <u>Masarat Mohi Ud</u> <u>Din</u>	<u>International Journal</u> <u>of Information</u> <u>Technology</u>	https://github.com/ieee8023/covid-chestxray-dataset/blob/master/metadata.csv

WORKFLOW





DATA SET USED

➤ <https://www.kaggle.com/paultimothymo...>

From this data set X-Ray images of covid +ve and normal patient images are to be used

Normal patient

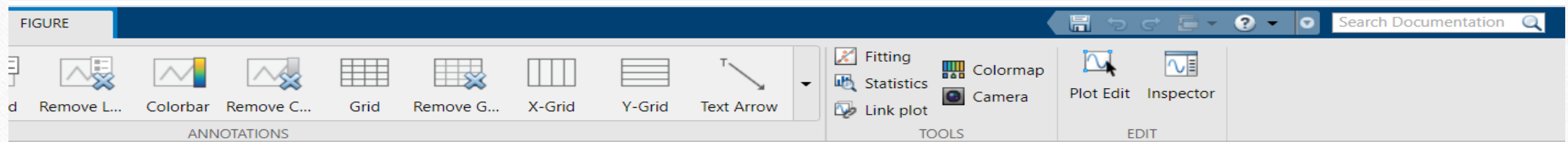


Covid +ve patient



Code for reading and displaying data set

- Functions used for reading and displaying data
- **datapath**:-To give the path of required image.
- **datastore**:-To store image in a variable.
- **total-split**:-Determining the split up.
- **num-images**:-To count the no of images.
- **subplot images**:-Subplot(m,n,p) divides the current figure into m by n grid & creates axes in position specified by p.



mal

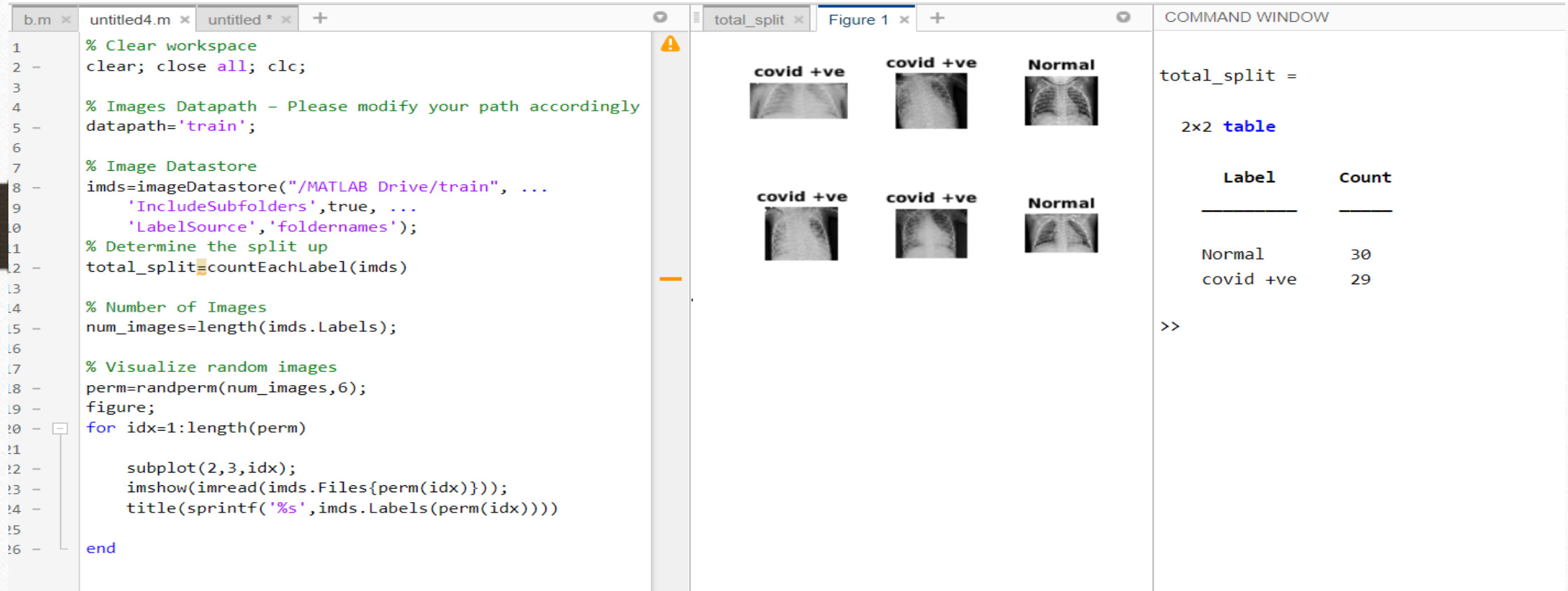
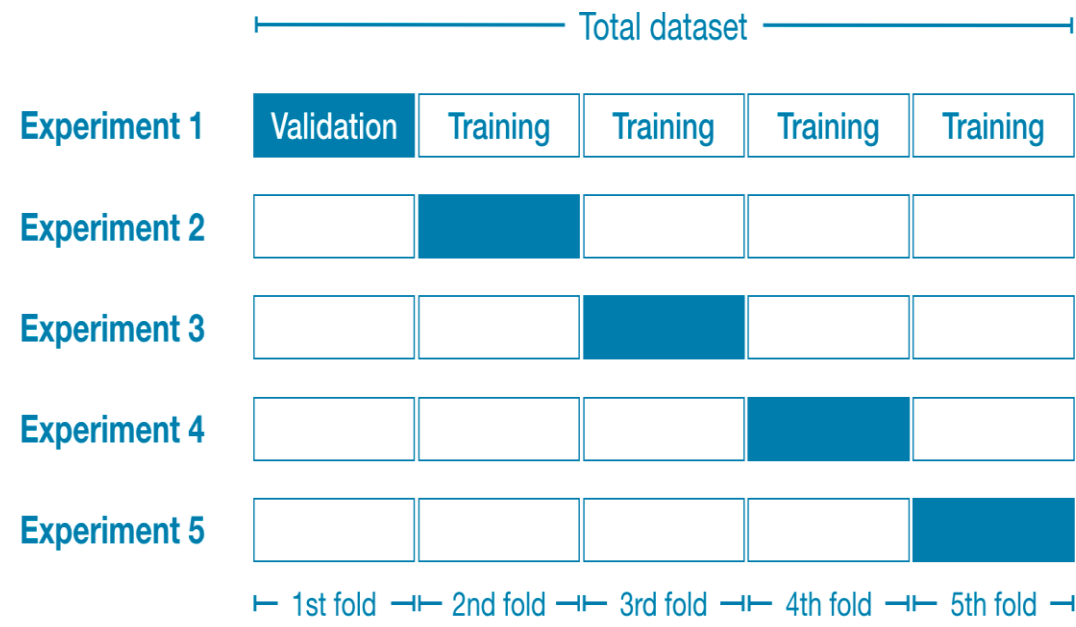


Image Preprocessing

- Converting Image (COVID +) to Grayscale
- Applying Filter

ML Algorithm to be used

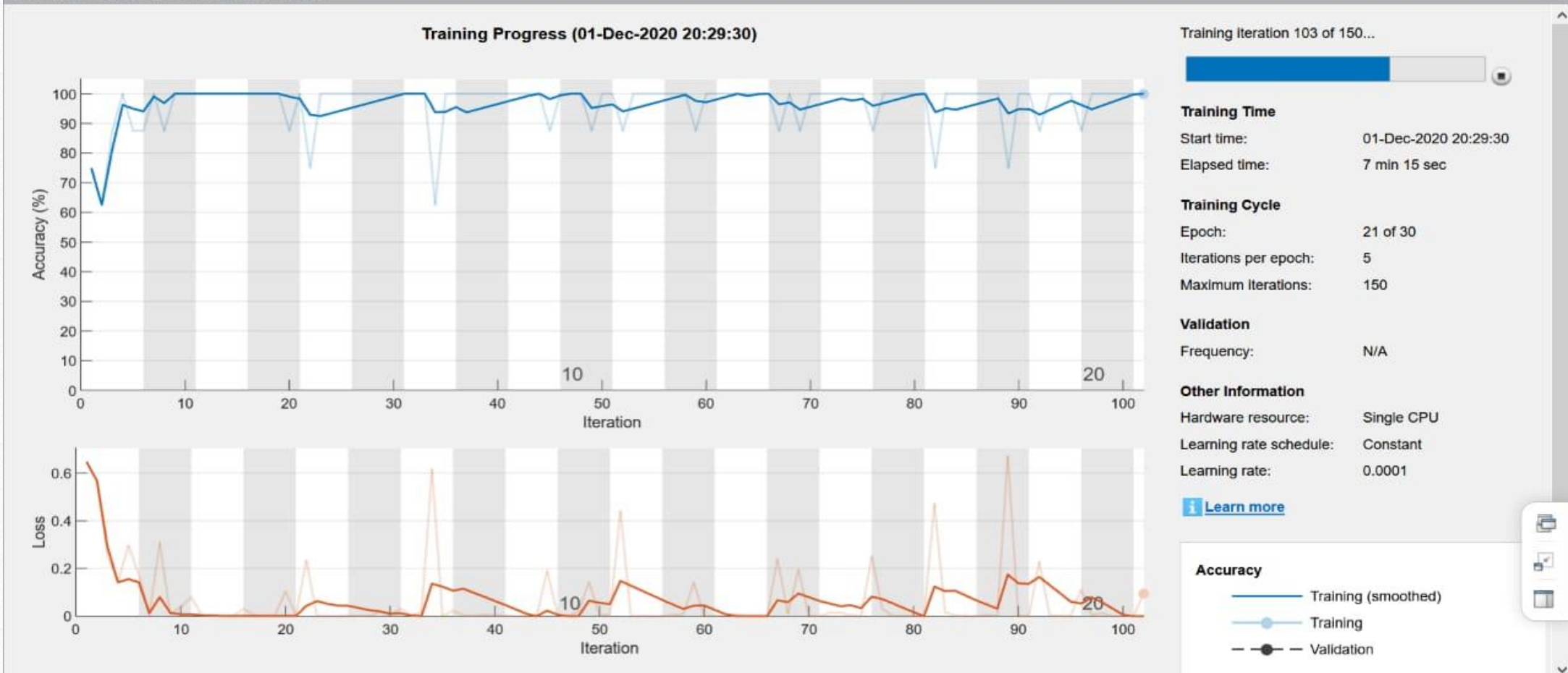
- **K-fold Cross-validation** is a statistical method used to estimate the skill of machine learning models.
- It is commonly used in applied machine learning to compare and select a model for a given predictive modeling problem.
- Because it is easy to understand, easy to implement, and results in skill estimates that generally have a lower bias than other methods.



How the algorithm works?

- The procedure has a single parameter called **k** that refers to the number of groups that a given data sample is to be split into and hence the procedure is often called k-fold cross-validation.
- The general procedure is as follows:
 1. Shuffle the dataset randomly.
 2. Split the dataset into k groups
 3. For each unique group:
 - a) Take the group as a hold out or test data set
 - b) Take the remaining groups as a training data set
 - c) Fit a model on the training set and evaluate it on the test set
 - d) Retain the evaluation score and discard the model
 4. Summarize the skill of the model using the sample of model evaluation scores

Training Progress (01-Dec-2020 20:29:30)



Display of Result

- Final display of result i.e positive or negative

- Resources

- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7476608/>
- <https://link.springer.com/article/>