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Assignment 8

[43212]

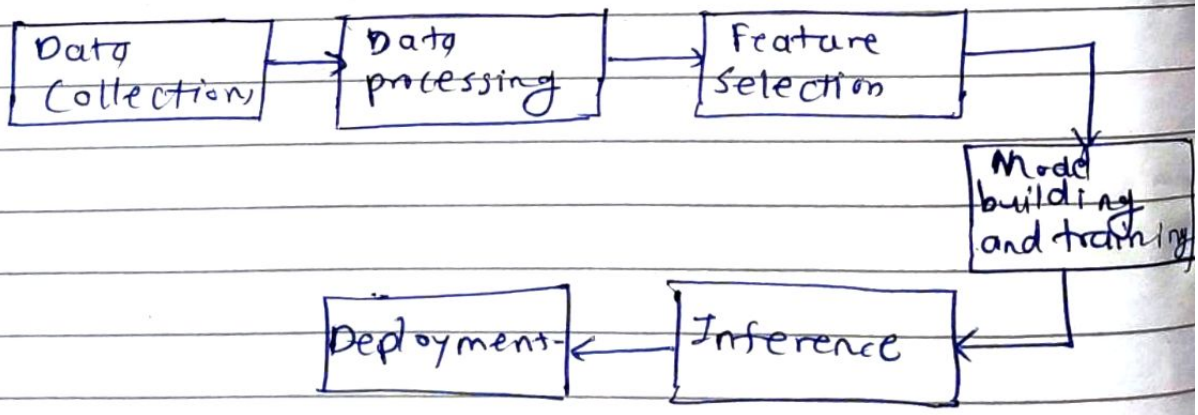
* Title:- Android and Machine Learning.

* Problem Statement:-
Draw inference over the data coming from phone's sensing hardware (e.g. accelerometer, GPS, microphone, etc.) and proces these samples with the help of machine learning

Theory:-

* Machine Learning:-
It is a programming technique that provides your apps the ability to automatically learn and improve from experience without being explicitely.
This is specially well suited for applications that utilize unstructured data such as images and text or problems with large no. of parameter such as predicting the winning sports team

ML development proces:-



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① Design:-

In this stage, product manager designer and developers work together to define product goals and create a high level design of the app.

(ii) Building & Training :-

- Machine Learning requires a model that is trained to perform a particular task, like making a prediction or classifying or recognizing same i/p.

- Developers can select an existing model or build a model from scratch.

(iii) Inference :-

- Inference is the process of using a machine learning model that has already been trained to perform a specific task.

- A key decision to be taken by android developers is wheather to make inferring run on a device or on a cloud service that is accessed remotely.

- Usually issues to be taken into account are latency cost and privacy issue.

(iv) Deployment:

It is the process of packaging and updating your ML model for use on Android when doing on device inference.

There are 3 options availables.

1) Include the model with your android app.

ii) Provide the model at runtime.
iii) A combination of both.

Some of the key application of ML in android are

i) Image labelling :

- Image labelling models allows device to recognize entities in an image without having to provide any contextual metadata, using either an on device API as a cloud based API.
- When you use this model, you get a list of entities that were recognize: people, things, places etc.

ii) Barcode scanning :-

- This barcode scanning model allows you read data encoded using most standard barcode formats.

* conclusion :-

Hence, machine learning with Android has been studied and understood.