How to choose an AI project:

We need to select the project that is feasible i.e that can be done with AI and valuable for business.

Cross functional teams are formed in order to choose the project. The team consists of both AI experts and domain experts - experts in area of business.

A framework is used while selecting the project.

* Think about automating the tasks rather than automating jobs.

Eg : if we take radiologists as example, radiologists do many tasks like viewing X rays, assisting junior doctors, consulting patients.

We can select any one of the task. For eg: AI assistance or automation for reading X-Rays

* What are the main drivers of business values?
* What are the main pain points in the business?

Some can be solved with AI and some cannot. By understanding the main points we can create a useful project.

We can also make progress without data:

With small datasets you can still make progress.

How to choose an AI project:

To make sure the selected project is feasible, we need to go through technical diligence and to make sure the project is valuable we need to go through a business diligence process.

Technical Diligence:

* Can AI meet the desired performance

Eg: Building a speech recognition - consulting AI experts or perhaps reading literature can give sense whether it is doable or not.

* How much data is needed to get desired level performance.
* Engineering timeline - trying to figure out how long it will take and how many people it will take build a system.

Business Diligence:

Business diligence is known as the process of thinking through carefully for AI system that you are building can achieve your business goal

* Low costs
* Increase revenue
* Launch new product or business

There is another diligence known as ethic diligence - whatever we build we should see whether it can make society better off.

When planning an AI project, decide whether to buy or build.

* ML projects can be both in-house and out-sourced projects. If we have an out source project we can have access much more quickly to talent and get going faster on project.
* Data science projects are most commonly done in-house.

Working with an AI team.

* We need to specify our acceptance criteria.
* Should have a dataset to measure the performance.

AI team group data into two sets.

Training set: examples of input A and output B

Testing set: Examples to test the algorithms built.

Limitations in ML:

* In sufficient data - not enough data to train the model.
* Messy data
* Ambiguous labels.

We have many technical tools for AI teams like Tensorflow, R, CNTK, Weka, Caffe

CASE STUDIES:

Case study on smart speaker

Eg: google home, siri apple, amazon alexa.

Steps to process the command - “Hey device, tell me a joke”

* Trigger word/wake word detection

Speaker uses ML algorithm of input audio and output hey device

* Speech recognition

Select the audio after hey device and map it to tell me a joke

* Intent recognition

Take what we said and to figure out what we actually wanted to do

* Execute the request.

Case study on self driving cars:

Steps for deciding how to drive

* Car detection
* Pedestrian detection
* Motion planning step