

# AI 101 for Students\*

## One day course

*Version v0.3*

*Please refer to Notes below each slide – there are notes for editing the slides, notes for the trainer to consider and Trainer / Speaker notes as aid for the training delivery*

# Schedule for the day

- Introduction session – 9.00 to 9.15 AM
- Session 1 – Theory – 9.15 to 9.30 AM
- Session 1 – Exercise – 9.30 to 10.30 AM
- Tea Break – 10.30 to 10.45 AM
- Session 2 - 10.45 to 12 Noon
- Lunch Break – 12 Noon to 1.00 PM
- Session 3 – 1.00 to 3.00 PM
- Closing session – 3.00 to 3.30 PM
- Tea and Conversations – 3.30 PM to 4.00 PM

# Who should take this course?

- This program is for Students(and aspiring Managers)
- To introduce the concept of Artificial Intelligence to non-IT Managers. Managers who grapple with the challenge of solving business problems day in and day out, but are not fully aware of the power of Artificial Intelligence and how they can use the cutting edge Digital technology to solve their business problems
- For Managers who want to grow their organization faster than their competitors

# What is this course about?

- As a Manager, how do I make use of cutting edge technologies such as Artificial Intelligence?
- How do I identify the most relevant business problems?
- How to get immediate results using a combination of powerful concepts that have been successful on their own – but combined, they present an unbeatable force
- What this course is not about ? This course is not about making you technical experts in Artificial Intelligence or other tools and programming – let the techies do that work – we are Managers (future Managers) and lets do what is right for the business at the right time

# AI - related technologies and concepts

- **AI & ML – based on data in current ERP and other business systems, make new correlations and help identify trends and solutions to business problems**
- **IoT - Internet of Things – connect business systems to the machines and get realtime data to drive planning and execution**
- **Chatbots - Use of Artificial intelligence to improve bots communicating with users**
- Natural Language Processing
- Robotics / RPA – Robotic Process Automation
- Heuristics
- Big Data, 3D Printing, Google Glass – Virtual Reality, Augmented Reality, Predictive analytics

# Oops – Missed to ask an important question

- How often do you use Google to search for information?
- Did the earlier slide confuse you?
- You can google your way through all that information – this course is not about knowing all the details of all the technologies – it is about how others are using new technologies to solve business problems, and how you can/will use these technologies to your business' benefit

# Use of AI

- Name two uses of AI that you probably use everyday
- Graphic showing facebook tagging names on group photos that you upload
- Graphic showing auto complete in Google – see next slide

# Google

ctangular Snip



what is the meaning of artif

what is the meaning of artificial

what is the meaning of artifacts

what is the meaning of artificial intelligence

what is the meaning of artificial selection

what is the meaning of artifice

what is the meaning of artificial in hindi

what is the meaning of artificial insemination

what is the meaning of artificial satellite

what is the meaning of artifacts in hindi

what is the meaning of artificial silk



# Example 3

How Target Figured Out A Teen Girl Was Pregnant Before Her Father Did

Link

<https://www.forbes.com/sites/kashmirhill/2012/02/16/how-target-figured-out-a-teen-girl-was-pregnant-before-her-father-did/#6777a8f26668>

# Example 4

Mark the date on the article – 2008

Google was using AI 10 years back – now you know why  
Google is one of the most successful companies of our times

<http://www.cnn.com/2008/HEALTH/conditions/11/11/google.flu.trends/>

# Example 5

NDTV news item on how Pentagon is using AI

<https://www.ndtv.com/world-news/deep-in-the-pentagon-a-secret-ai-program-to-find-hidden-nuclear-missiles-1862933>

# Example 6

Google worried about ethics of AI – new York times article

<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=oahUKEwi6ovjQsMXbAhUQP6wKHQ-vByUQqUMIMDAB&url=https%3A%2F%2Fwww.nytimes.com%2F2018%2F06%2F07%2Ftechnology%2Fgoogle-artificial-intelligence-weapons.html&usg=AOvVaw2btYs1VCzP1y0WYjGnv8EA>

# Only for Trainer

We come to the end of the introduction and theory  
Now time for some exercise

# Time to work now!

- Please roll up your sleeves now – time to work!

# Let's work

Exercise – 75 minutes

First 5 minutes – Participants ( team of two if too many participants) , to identify one success story – where internationally AI has been used successfully by a company to grow their business or solve a business problem

Title to be given to Trainer in 15 minutes – trainer to note the topics down on the board – no duplicates allowed – if at the end of 15 minutes of google search, some participants do not have a good topic, then trainer to provide from a readymade list of 10 topics

# Let's work

Exercise – Next 10 minutes

Participant(s) to create one slide – online or on a piece of paper a one page summary in the following template

1. Name of the topic – what is the success story they are referring to
2. Why do they think it was a success story worth exploring
3. What technology was used
4. What business problem did it solve , OR how much revenue was generated OR some quantitative result from the story
5. Identify two or more similar application in Indian context – for an Indian company
6. Any other idea that was generated while going through this example



# Let's work

Exercise – Next 60 minutes

Participant(s) to take 5 minutes each and talk about their one slider

End of Exercise

You have not only engaged the participants, but also created 10 good slides for the next training course!

# 10 Sample slides to be used in case the exercise earlier does not yield good results

## Case Study / User Story examples

[https://www.sas.com/en\\_us/industry.html?keyword=artificial%20intelligence&matchtype=p&publisher=google&gclid=EAIaIQobChMIp7u8sOC42wIV1mGCh0gBQNQEAYASACEgJQ7PD\\_BwE](https://www.sas.com/en_us/industry.html?keyword=artificial%20intelligence&matchtype=p&publisher=google&gclid=EAIaIQobChMIp7u8sOC42wIV1mGCh0gBQNQEAYASACEgJQ7PD_BwE)

[https://www.sas.com/en\\_us/customers/american-honda.html](https://www.sas.com/en_us/customers/american-honda.html)

<https://www.devteam.space/blog/10-real-life-examples-of-artificial-intelligence/>

<https://www.techemergence.com/ai-in-business-intelligence-applications/>

<https://www.techemergence.com/everyday-examples-of-ai/>

# Now let's talk about the Course content

We had avoided talking about the course content so far

This course is about combining four powerful concepts into a winning formula

Design thinking to identify what problem to solve

Using AI and technology to solve the problem

Using Cloud infrastructure to accelerate solution design and implementation

Using Scrum methodology to fail fast, and succeed faster

# Design Thinking

Add two or three slides on Design Thinking for Problem Solving

And have a practical exercise for participants to use design thinking principles in a practical setup

40 to 45 minutes

# Note for Trainer

We have now completed 2 / 3<sup>rd</sup> of the course content and used up 4 hours of the 6 hours total time we have for the training.

Recap – use design thinking for identifying the real problem to solve, use AI and other tools to solve the problem

Now to introduce the last two smaller sections of the program , ask the participants – how much time do you think we need to solve a problem? And how many people – collate their answers – most probably their answer will be in months and years

Now shock them with the suggestion that problems can be solved in weeks

# Leveraging Cloud for Machine Learning

Amazon SageMaker – Build, train, and deploy Machine Learning models at scale

Amazon SageMaker is a fully-managed platform that enables developers and data scientists to quickly and easily build, train, and deploy machine learning models at any scale. Amazon SageMaker removes all the barriers that typically slow down developers who want to use machine learning.

Play the video in the link below

[https://aws.amazon.com/sagemaker/?sc\\_channel=PS&sc\\_campaign=pac\\_ps\\_q4&sc\\_publisher=google&sc\\_medium=sagemaker\\_b\\_pac\\_search&sc\\_content=machine\\_learning\\_framework\\_e&sc\\_detail=amazon%20sagemaker&sc\\_category=sagemaker&sc\\_segment=webp&sc\\_matchtype=e&sc\\_country=US&sc\\_geo=namer&sc\\_outcome=pac&sc\\_kwid=AL!4422!3!245225393478!e!!g!!amazon%20sagemaker&ef\\_id=Wlbb4wAAAH2GwA\\_5:20180610021949:s](https://aws.amazon.com/sagemaker/?sc_channel=PS&sc_campaign=pac_ps_q4&sc_publisher=google&sc_medium=sagemaker_b_pac_search&sc_content=machine_learning_framework_e&sc_detail=amazon%20sagemaker&sc_category=sagemaker&sc_segment=webp&sc_matchtype=e&sc_country=US&sc_geo=namer&sc_outcome=pac&sc_kwid=AL!4422!3!245225393478!e!!g!!amazon%20sagemaker&ef_id=Wlbb4wAAAH2GwA_5:20180610021949:s)

# Some more details on Amazon SageMaker

With Amazon SageMaker, you pay only for what you use. Building, training and hosting is billed by the second, with no minimum fees and no upfront commitments. Pricing within Amazon SageMaker is broken down by on-demand ML instances, ML storage, and fees for data processing in notebooks and hosting instances.

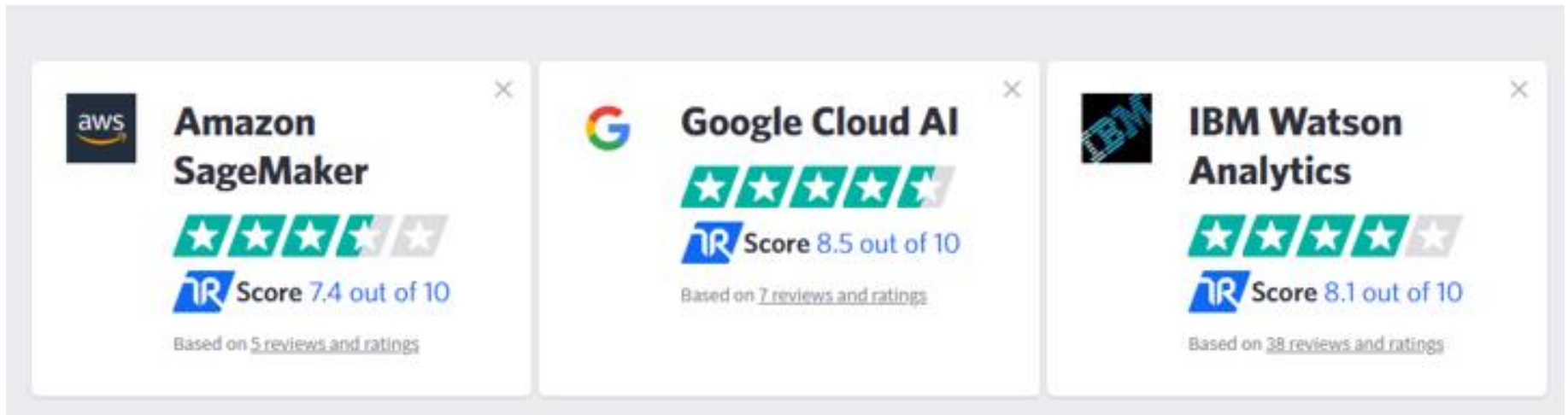
## **Free Tier**

As part of the [AWS Free Tier](#), you can get started with Amazon SageMaker for free. For the first two months after sign-up, you are offered a monthly free tier of 250 hours of t2.medium notebook usage for building your models, plus 50 hours of m4.xlarge for training, and 125 hours of m4.xlarge for hosting your machine learning models with Amazon SageMaker.

# Other options for AI/ML / Analytics on the Cloud

What users are saying about

## Amazon SageMaker **vs** Google Cloud AI **vs** IBM Watson Analytics





# Reference material on leveraging Cloud

Good article on Machine Learning on the cloud – use cases, advantages, disadvantages

<https://techbeacon.com/machine-learning-cloud-how-it-can-help-you-right-now>

# Reference material on leveraging Cloud

Article on using Google for AI on Cloud

<https://www.zdnet.com/article/should-google-be-your-ai-and-machine-learning-platform/>

# Example on Pricing – ML does not need to be costly

<https://bigml.com/pricing>



## [Pricing | BigML.com](https://bigml.com/pricing)

Perform unlimited tasks for datasets up to 16MB with our FREE plan. No limited trials and no credit card required. Or analyze bigger datasets and run more parallel tasks with one of our Subscription plans starting at \$30/month.

[bigml.com](https://bigml.com)

# Chatbots

A good video to introduce chatbots

<https://snatchbot.me/insight/189/snatchbot-s-vision-of-the-future-of-business-communications>

# An example of chatbot on the cloud

<https://medium.freecodecamp.org/how-i-designed-developed-and-deployed-a-chatbot-entirely-in-the-cloud-a60614eb94f2>

# Chatbots in education



<https://www.cloud28plus.com/emea/content/How-cloud-based-chatbot-will-enhance-student-experience-in-higher-education>

[How cloud-based chatbot will enhance student experience in higher education - Article - HPE Cloud28+](#)

Higher education landscape is changing Higher education bots are geared toward students in schools, colleges, universities and higher educational institutes through a familiar, conversational, mobile-ready chatbot interface. Chatbots are used to streamline critical academic processes, optimize learning and teaching, and initiate student self-service. The digital assistant is ready to assist students. What are the processes which are automated? Recruitment, enrolment, course registration, assignments, grading, and student evaluations. Nothing can match a chatbot ... [www.cloud28plus.com](http://www.cloud28plus.com)

# Note to Trainer

Recap – we are now entering the last section of the training program – we have seen how AI / ML can solve problems, how to use Design thinking to identify the real problems, and use technology on the cloud to implement solutions faster and cheaper – But how do we manage such projects – is it time to shed the old project management methodologies , where projects always end up with project cost and time overruns – Yes, welcome to Scrum – you may again participants on how many people and how much time does a company need to run such projects – actually you need very few people and very less time if you follow the scrum methodology

# Why Scrum?

Traditional project management emphasizes on conducting detailed upfront planning for the project with emphasis on fixing the scope, cost and schedule - and managing those parameters. Whereas, Scrum encourages data-based, iterative decision making in which the primary focus is on delivering products that satisfy customer requirements.

To deliver the greatest amount of value in the shortest amount of time, Scrum promotes prioritization and Time-boxing over fixing the scope, cost and schedule of a project. An important feature of Scrum is self-organization, which allows the individuals who are actually doing the work to estimate and take ownership of tasks.

Play the video in the below link

<https://www.scrumstudy.com/whyscrum/scrum-vs-traditional-pm>



# Scrum

Add two or three slides from the Scrum Guide below

Need to take the gist of the content and create two to three graphic slides – one with the 5 events, 3 types of roles etc  
And another one sprints

Emphasie MVP – Minimum Viable Product, having one or two week sprints, and having a potentially usable / shippable product at the end of each sprint

The way the current course material is being created is also a good example of iteratively creating a product without an elaborate project to manage

<https://www.scrumguides.org/docs/scrumguide/v2017/2017-Scrum-Guide-US.pdf>

# Notes for Organizer

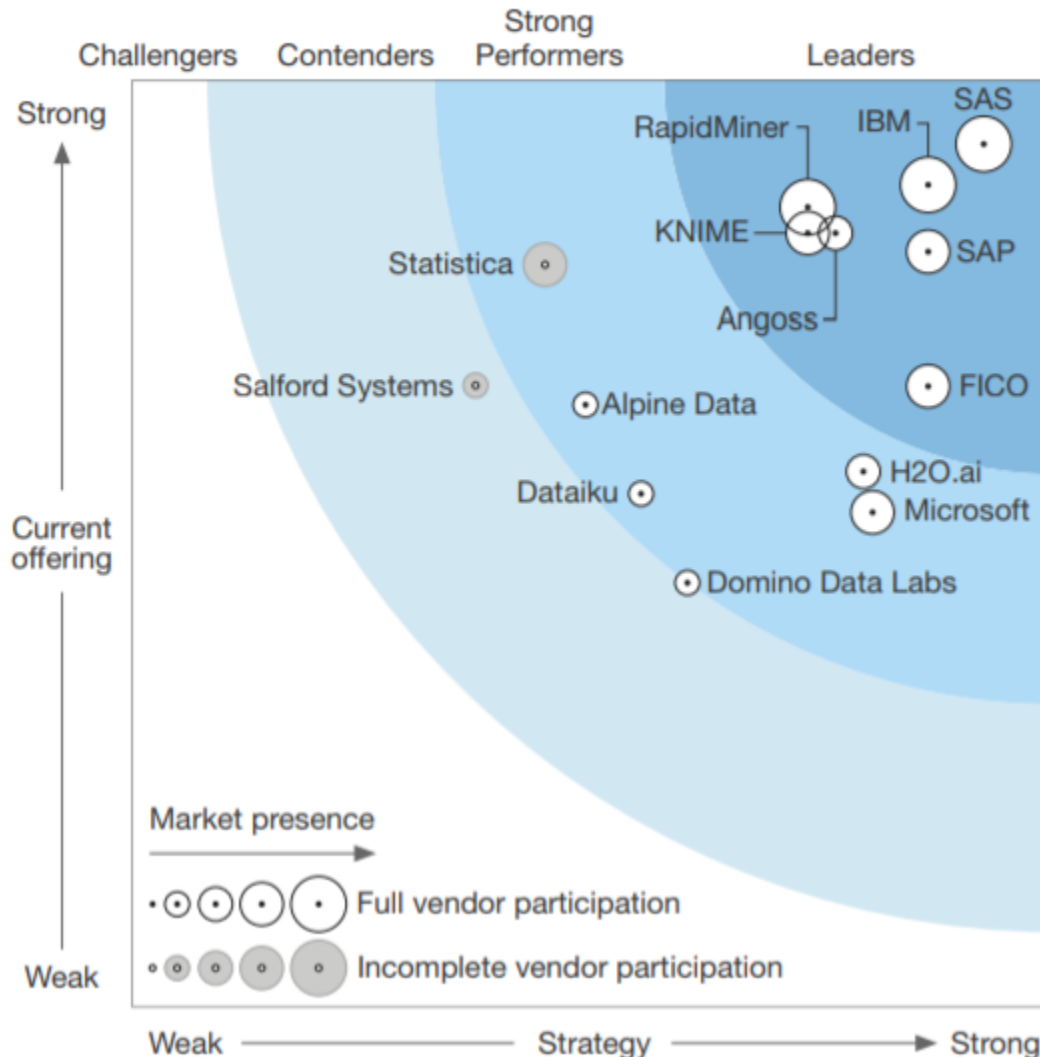
This is an initial one day course – it is also a teaser for more details two day courses on Design Thinking and Scrum  
And also for the more technically aligned, an introduction to the ITT K course on AI

# Appendix

Some additional slides, that can be used either as a reference, time filler Or incorporated into the body of the main presentation as required

# Appendix – Forrester Vendor profiles in the area of Machine Learning – to let participants

FIGURE 2 Forrester Wave™: Predictive Analytics And Machine Learning Solutions, Q1 '17



**FORRESTER RESEARCH**

The Forrester Wave™

Go to [Forrester.com](http://Forrester.com) to download the Forrester Wave tool for more detailed product evaluations, feature comparisons, and customizable rankings.

Similar to earlier slide – this time  
from Gartner

AI for Social Good – to be used  
while tweaking this training course  
for government / social sector

[https://cra.org/ccc/wp-  
content/uploads/sites/2/2016/04/AI-  
for-Social-Good-Workshop-  
Report.pdf](https://cra.org/ccc/wp-content/uploads/sites/2/2016/04/AI-for-Social-Good-Workshop-Report.pdf)

# Other links