Thanks for joining we will start at 4pm 🕓

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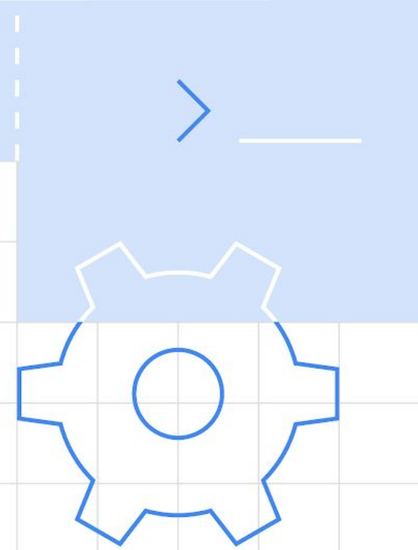
Today's Agenda



Understanding the real world Titanic Dataset

- Introduction to Kaggle.
- Importing some useful libraries and the Titanic dataset.
- Exploratory Data Analysis.
- Data Cleaning.
- Feature Encoding.
- Data Visualization.
- Q/A Session.

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Google Developer Students Club
Institute of Business Administration

Data Science for Everyone

NABEEL AHMED

ZOHAIR ABBAS

MUHAMMAD ARHAM

ABDUL REHMAN ABBASI

ZOHAIB AZAM

ABDUL AHAD IMTIAZ

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WHO AM I?

- Technical Lead - GDSC IBA
- Google certified Data Analyst
- SAP Functional Analyst - 3STEM
- Deputy Team Lead - TCF ADP
- ML/DL Enthusiast
- Loves to bring useful insights out of Data.

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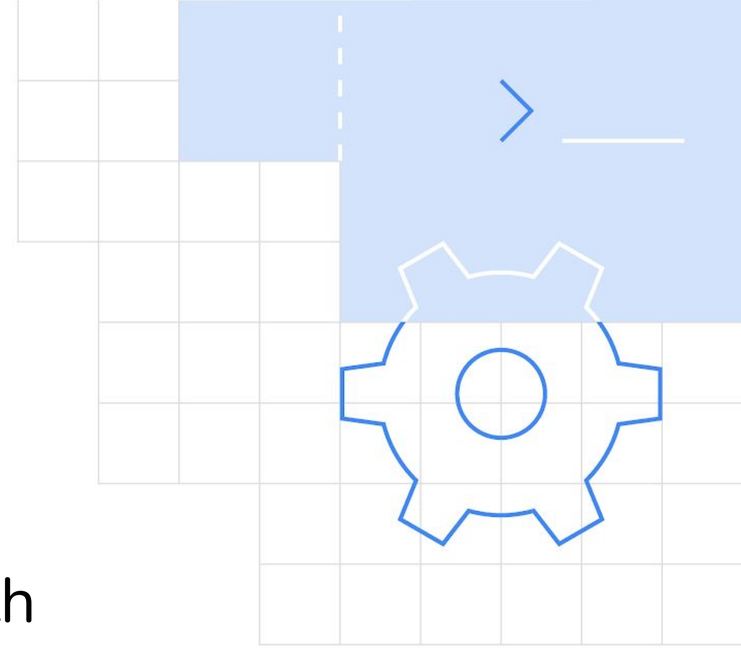
RMS Titanic

- 15 April, 1912
- 2224 Passengers
- 1502 Died

Challenge ?

- The sinking of the **Titanic** is one of the most infamous shipwrecks in history.
- On **April 15, 1912**, during her maiden voyage, the widely considered “unsinkable” RMS Titanic sank after colliding with an iceberg. Unfortunately, there weren’t enough lifeboats for everyone onboard, resulting in the death of **1502 out of 2224** passengers and crew.
- While there was some element of **luck** involved in surviving, it seems some groups of people were more likely to survive than others.



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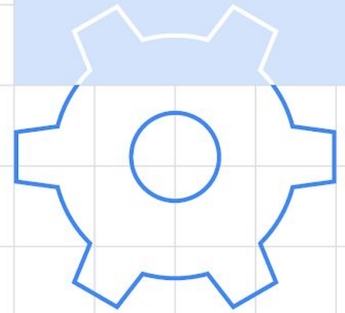
In this challenge, we ask you to build a predictive model that answers the question: “what sorts of people were more likely to survive?” using passenger data (ie name, age, gender, socio-economic class, etc).



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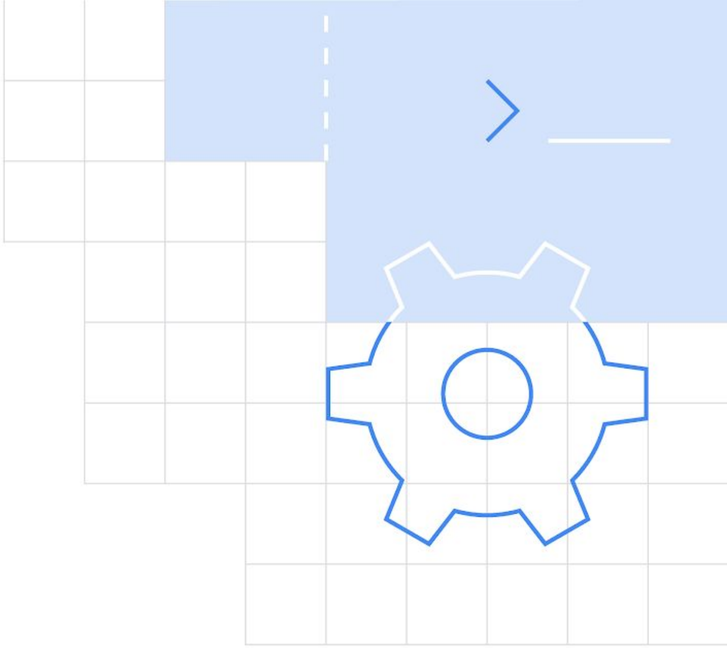
Revision



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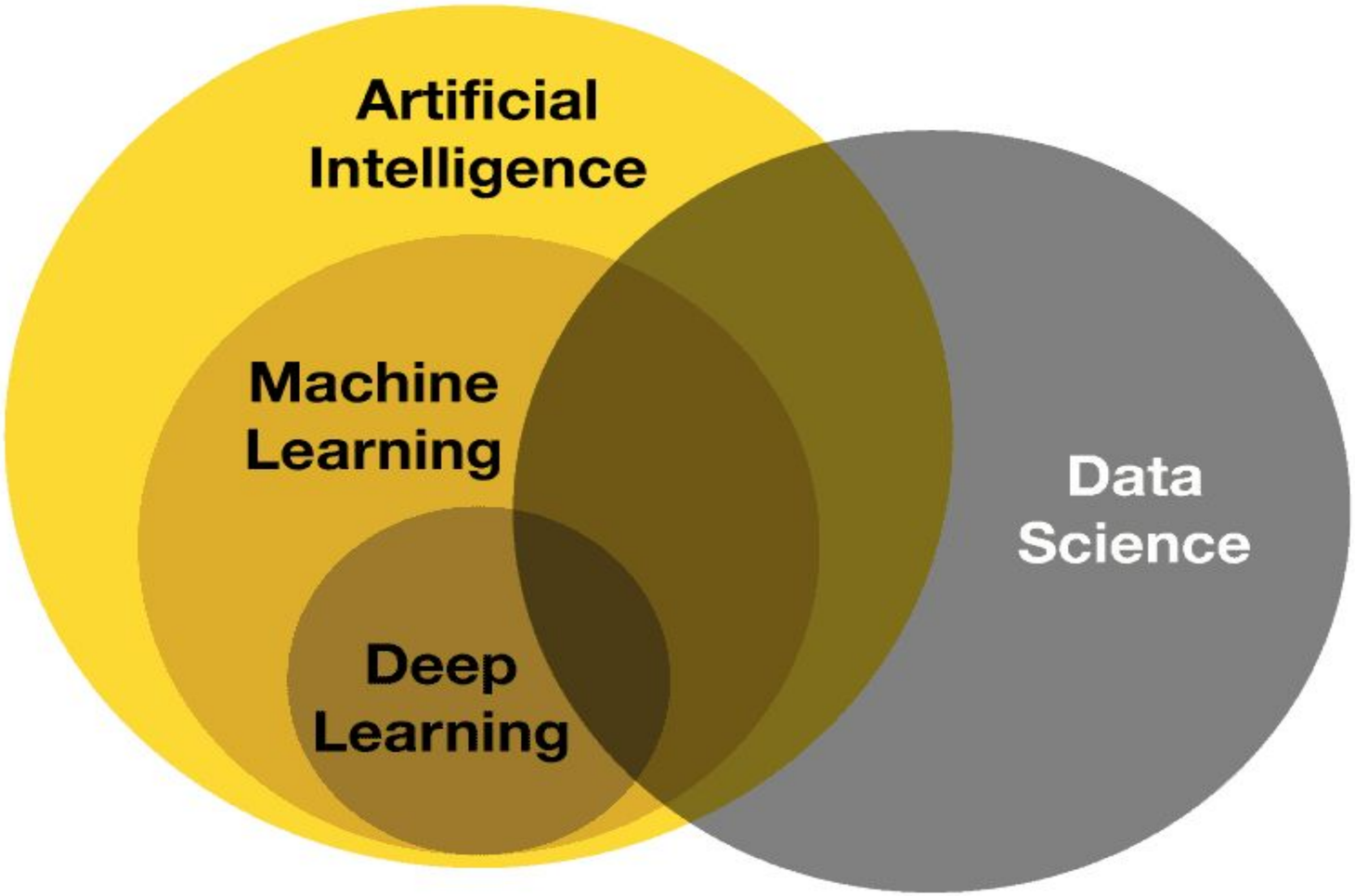
AI vs ML vs DL vs DS



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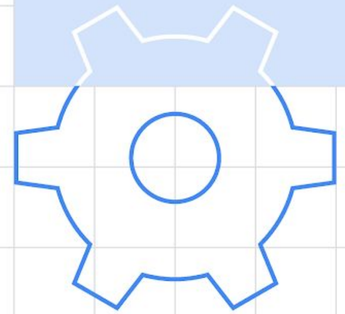
Traditional Programming
VS
Machine Learning



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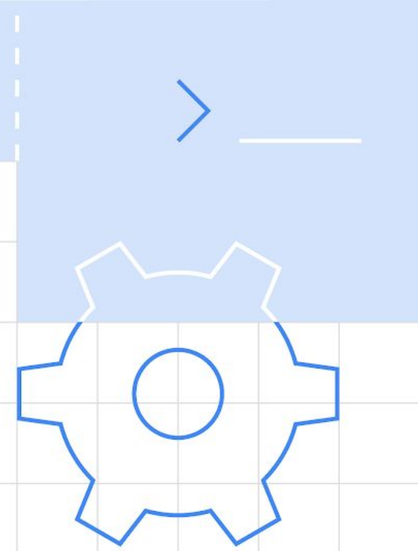
TP vs ML



In Traditional programming, we write down the exact steps required to solve the problem. While with a subset of Artificial Intelligence (AI), Machine Learning is motivated by human learning behavior; we just show examples and let the machine figure out how to solve the problem by itself

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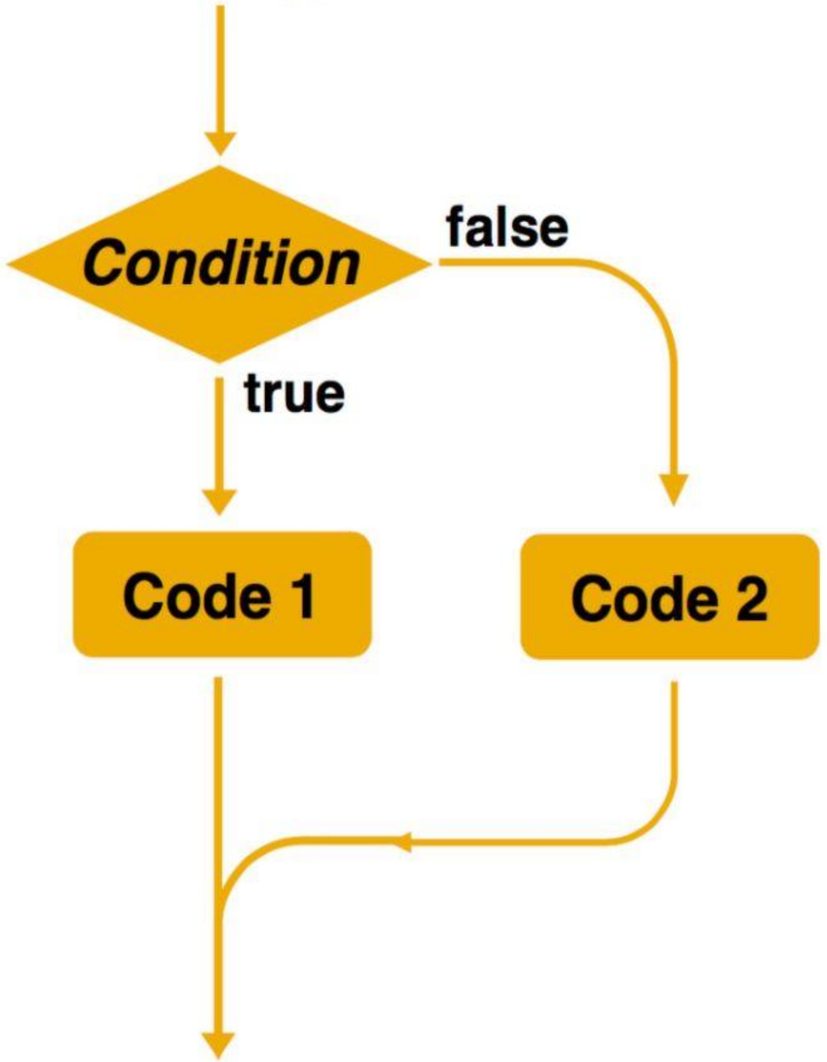
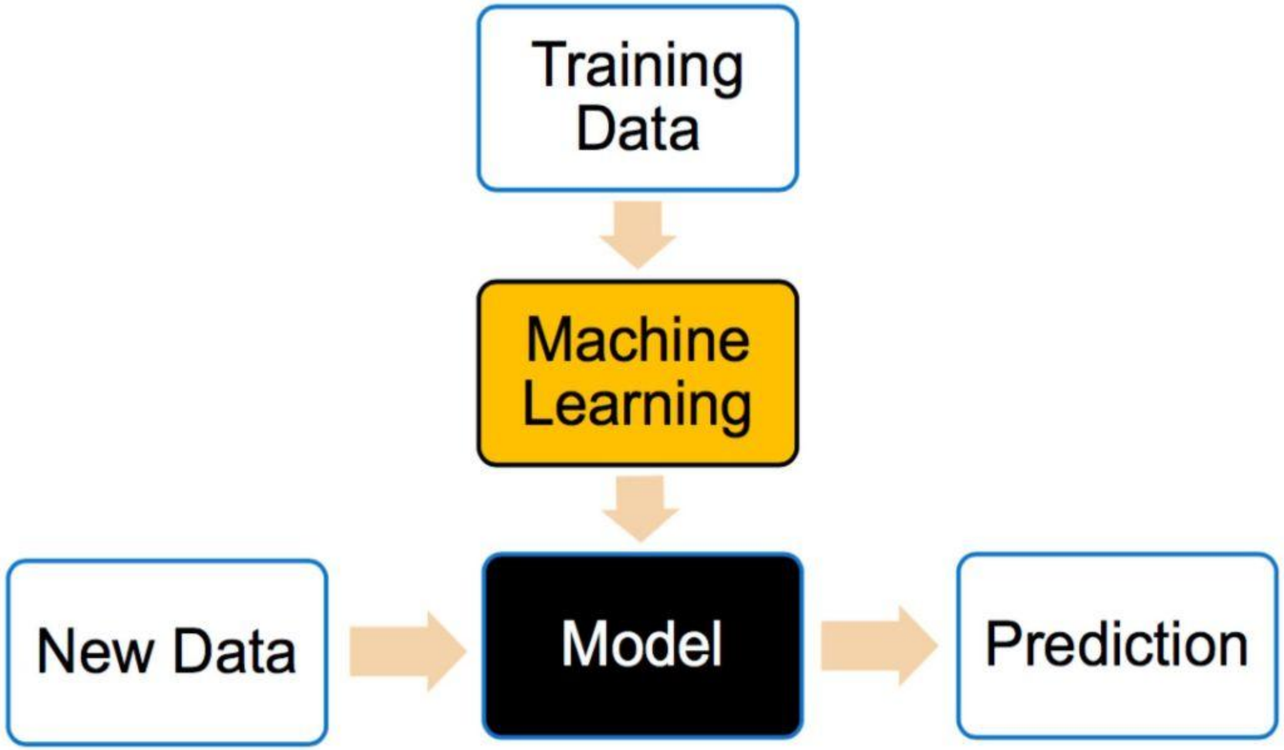
Rule-based approach



Machine learning



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What is Machine Learning?

- Machine learning is the study of computer algorithms that can improve automatically through experience and by the use of **data**. It is seen as a part of **artificial intelligence.** (Wikipedia)

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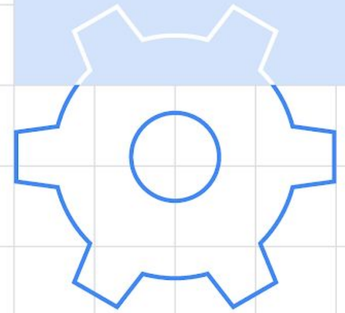
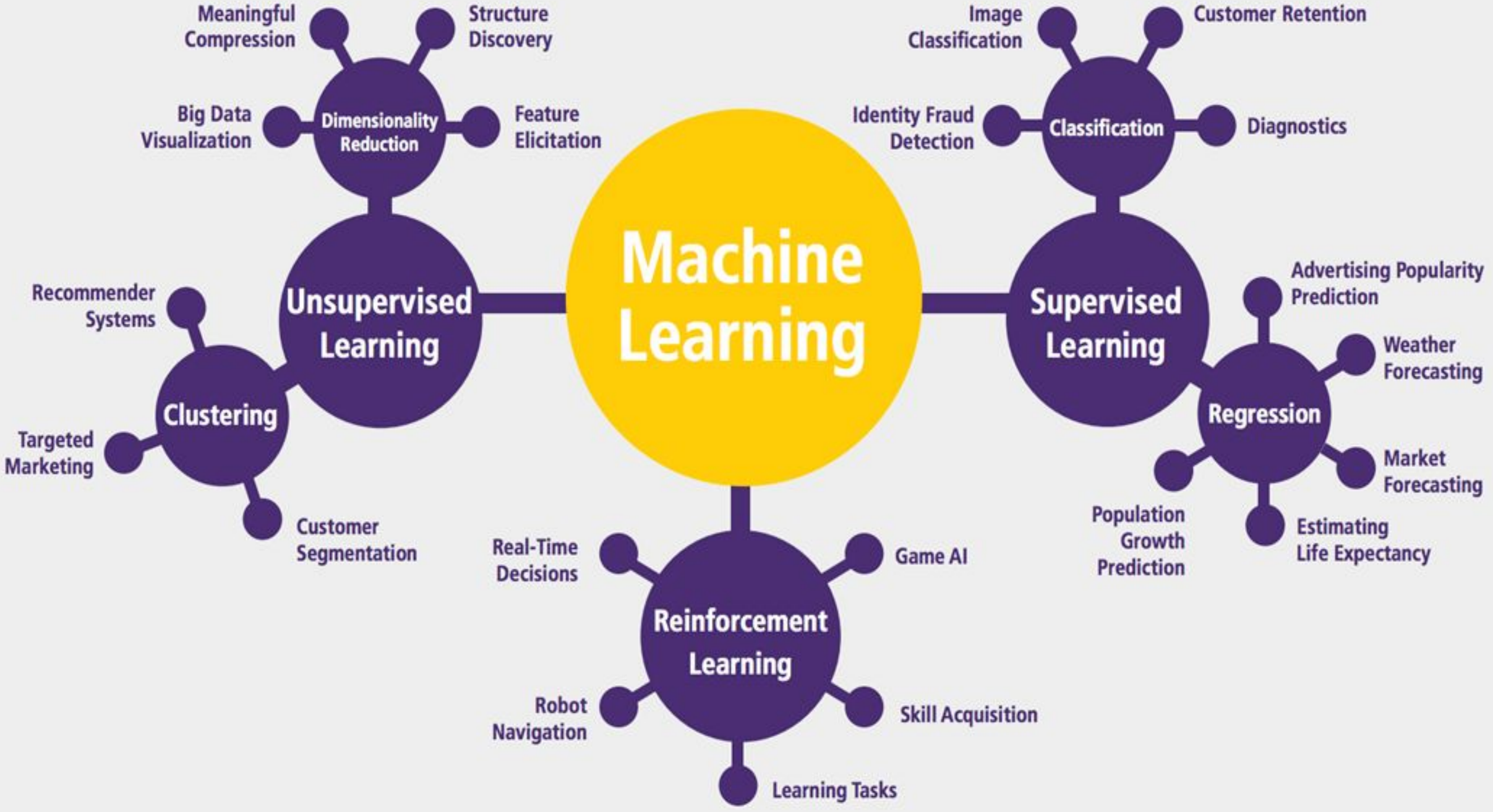
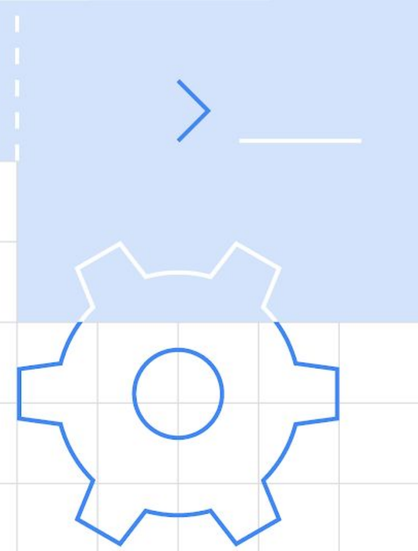
Applications of Machine Learning in day-to-day life



- Smartphones detecting faces while taking photos or unlocking themselves
- Facebook, LinkedIn or any other social media site recommending your friends and ads you might be interested in
- Banks using Machine Learning to detect Fraud transactions in real-time and many more...


Machine Learning
Unsupervised Learning
Dimensionality Reduction
Meaningful Compression
Structure Discovery
Big Data Visualization
Feature Elicitation
Clustering
Recommender Systems
Targeted Marketing
Customer Segmentation
Supervised Learning
Classification
Image Classification
Customer Retention
Identity Fraud Detection
Diagnostics
Regression
Advertising Popularity Prediction
Weather Forecasting
Market Forecasting
Estimating Life Expectancy
Population Growth Prediction
Reinforcement Learning
Real-Time Decisions
Game AI
Robot Navigation
Skill Acquisition
Learning Tasks

Types of Machine Learning



1) Supervised Machine Learning:
   - Classification problems. i.e Spam or not, Survived or not
   - Regression problems. i.e House prices, etc
2) Unsupervised Machine Learning:
   - Clustering
   - Dimensionality Reduction
3) Reinforcement Learning (Agent Based Learning)

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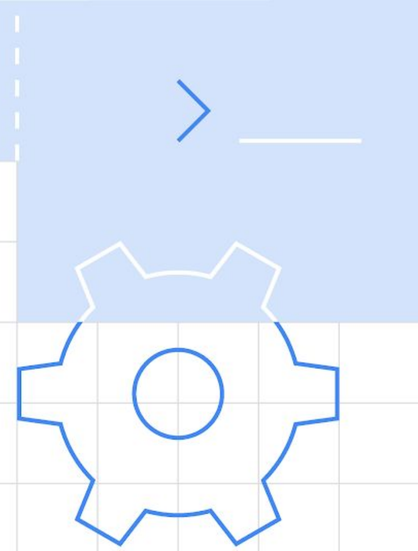
Supervised Learning Algorithms



- Linear Regression
- Logistic Regression
- K Nearest Neighbor - KNN
- Decision Trees
- Random Forest
- Naive Bayes’
- Support Vector Machine - SVM

and many more...

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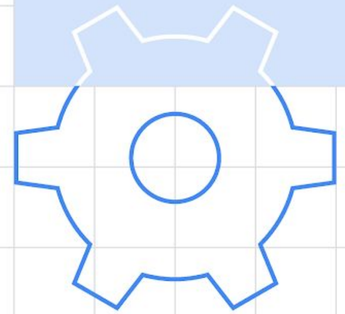
Life Cycle of Data Science Project



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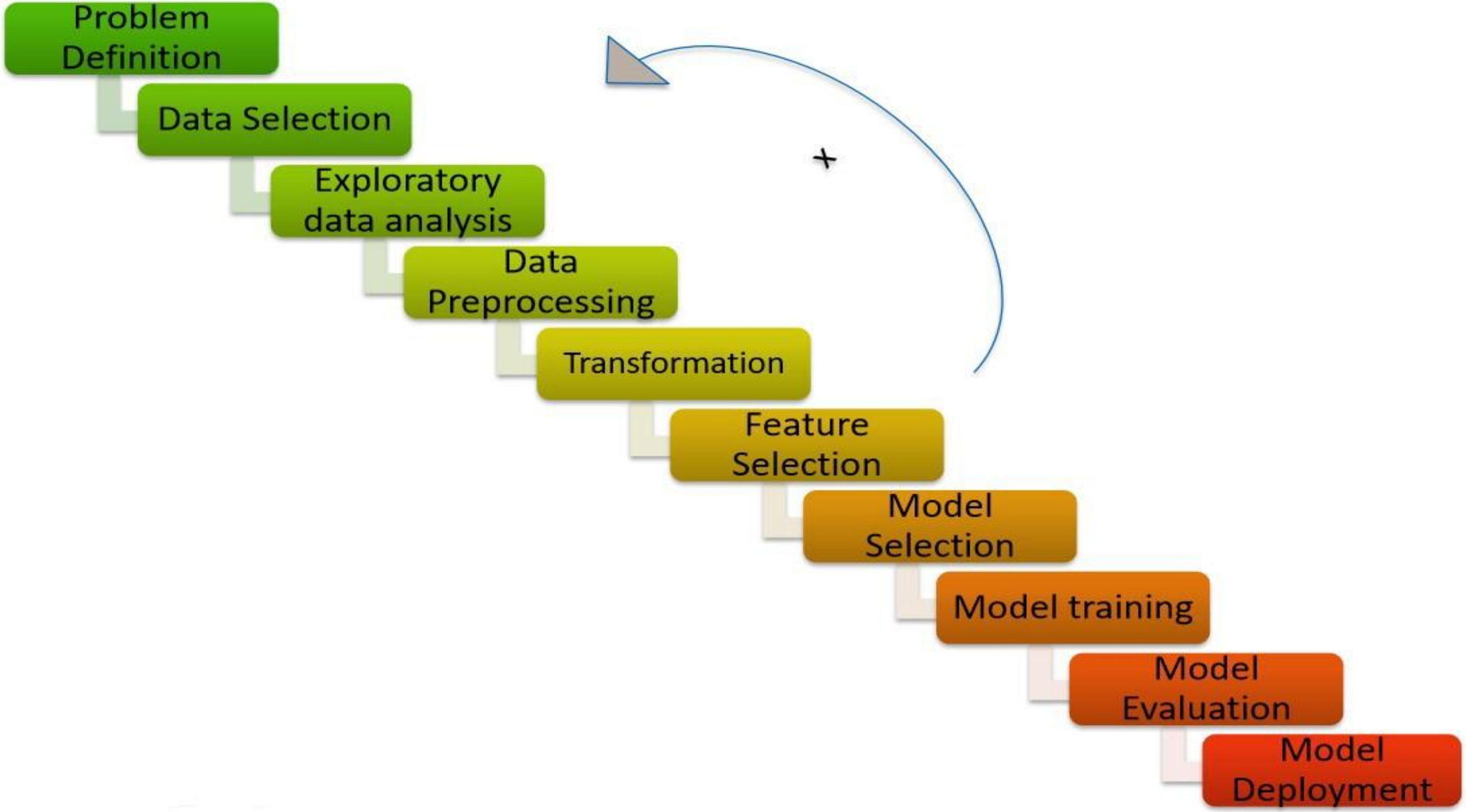
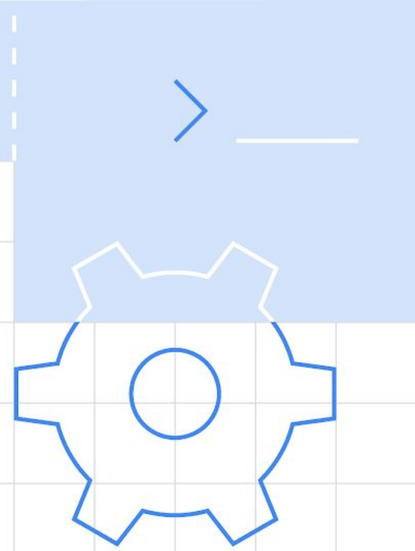

Problem Definition
Data Selection
Exploratory data analysis
Data Preprocessing
Transformation
Feature Selection
Model Selection
Model training
Model Evaluation
Model Deployment

What approach we will follow in this bootcamp?



- Importing Dataset
- Exploratory Data Analysis
- Data Cleaning
- Feature Engineering (Encoding, Scaling etc)
- Feature Selection
- Model Selection and fitting
- Predictions

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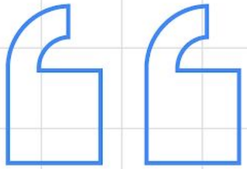

Are you all ready Now to kick-start your journey as **Data Scientists**?

Let's get started!

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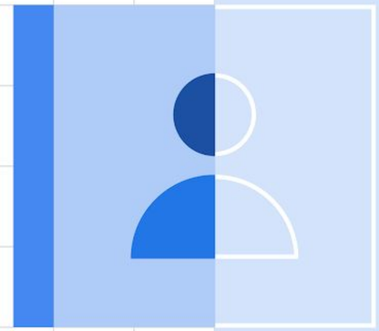
Thank you so much!!!

Hope you all are pumped up and excited for upcoming DSC Sessions!



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Q/A Session