DATA ANALYTICS

Course Overview

Mamatha.H.R
Department of Computer Science and Engineering

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Top stories

Big **Data Analytics** Software Market 2020 with **COVID-19** ...

3rd Watch News - 4 hours ago

Big **Data Analytics** Software Market 2020 with **COVID-19** Impact Analysis, Industry Growth, Future Trends, Key Players and Regional Outlook ...

Bandera County ...

Brazil adopts real-time **analytics** to present **Covid-19 data**

ZDNet - 22 hours ago

The Brazilian government has launched a new portal powered by real-time **data analytics** to report the evolving picture on the **Covid-19** ...

Big **Data Analytics** In Banking Market with Imapct of **COVID19** ...

3rd Watch News - 12-Jun-2020

Big **Data Analytics** In Banking Market with Imapct of **COVID19** By Top Keyplayers IBM, Oracle, SAP SE, Microsoft, HP, June 12, 2020 ...

Global Big **Data Analytics** in Healthcare Market with **COVID-19** ...

Bulletin Line - 11-Jun-2020

View all

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Top stories-contd.,

ETCIO

How data analytics can be leveraged to realize personalized care management

Analytics will, in the near future, aid physicians to effectively identify patients who are most likely to benefit from such care programs, to make informed decisions and to manage their care and lower costs

ETCIO

Banking analytics trends to look in 2020

The future challenge is to develop analytic strengths that span the organisation and not just areas of expertise.

Reuters

China rolls out fresh data collection campaign to combat coronavirus

China's local governments are ramping up surveillance efforts with new data collection campaigns to better trace residents' moves in public areas, seeking to curb the coronavirus outbreak but heightening privac...

ETCIO

How Apollo Hospitals use data analytics for infection control surveillance

Arvind Sivaramakrishnan, CHCIO, Apollo Hospitals, used data analytics for infection control surveillance. He also talks about the implementation of personal health records and navigating the challenges around it.

ETCIO

Shriram General Insurance's journey from analysis to analytics

The insurance firm is looking at ways to expand the business, improve claim processing by going deeper into machine learning and neural networks.

ETCIO

Religare Health Insurance looks at AI for claim settlement

Suresh Kolla, EVP, Head-IT at Religare Health Insurance, is in the midst of deploying solutions based on AI and advanced analytics to take business to the next level.

ETCIO

How RailYatri's innovative technology is revolutionising bus, train travel

Manish Rathi, CEO and Co-founder of RailYatri, provides insights into how the company maximises data analytics to enhance customer experience and enable new revenue streams.

ETCIO

How technology can predict Bollywood's box-office collection

With more than 300 commercially and critically acclaimed movies in its portfolio, Reliance Entertainment is working on a platform that can predict the business volume with respect to a particular

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Top stories-contd.,

TNN

India Inc uses data analytics to ensure fair appraisal

Given that objectivity is more important during appraisals than human emotions, many organisations have adopted data analytics to ensure the process of appraisal is fair and transparent

PTI

Navy to focus on big data analytics, artificial intelligence

"The new transition cycle has also resulted in the overall improvement of operational logistics, spares management and forecasting, refit planning and expenditure management," the Navy said.

ET Bureau

I-T Department plans to use data analytics tools for examining investment and cash deposits

The I-T dept has started sending missive to banks and post offices to submit details of high-value cash deposits in banks and post office accounts.

ETCIO

United Nations leverages Qlik's data analytics for humanitarian missions globally

United Nations and Qlik has announced partnership to utilize data analytics to improve efficiency and efficacy of humanitarian works across the world

tells ETCIO.

ETCIO

And It's a match! OkCupid CTO redefines the dating game with Data science

With one of the most high-tech matching algorithms, OkCupid helps those looking for a meaningful relationship find their kind.

ETCIO

Inside the data driven model of Ola with Sanjay Kharb, VP- Engineering, Ola

"Deriving insights from data is at the heart of everything we do at Ola," exclaims Sanjay Kharb, VP- Engineering, Ola. In an interview with ETCIO, he provides insights into the data science model

Indian Student In US Uses Big Data Analytics To Tackle Parking Problem

Indians Abroad | Press Trust of India | Wednesday October 31, 2018

An Indian student in the US has created a space-detecting algorithm that can help tackle the problem of finding a parking spot by using big data analytics and save a person's time and money.

Using Algorithms, This New Tool Can Predict When A Building Will Collapse

Science | Indo-Asian News Service | Thursday August 16, 2018

Australian researchers today said they have developed a software tool to predict when a building will crack or its foundation will move, even when a dam could break or a mudslide occur. The tool uses applied mathematics and big data analytics to analyse intricate ground motion patterns and track location and time of landslides to forecast them up t...

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Top stories-contd.,

ET Bureau

Budget 2016: Data analytics helps government collect Rs 10,000 crore from non-filers

The government said it collected more than Rs 10,000 crore by leveraging data analytics in the non-filers monitoring system.

ET Bureau

Now politicians use data analytics to improve decision-making

Among the techniques and tools being used are social media analysis, predictive algorithms, data analytics and forecasting based on primary data

Government to use data analytics to go after 18 lakh suspect depositors

According to revenue secretary Adhia, missives will be sent to tax payers on deposits of over Rs 5 lakh in the first phase of the crackdown.

'Data Analytics' - 11 Video Result(s)

2:22

"Data Is The New Oil, The New Gold": PM At 'Howdy, Modi!" In Houston

29:32

Exclusive: 'Whistleblower' Reveals Cambridge Analytica's India Link

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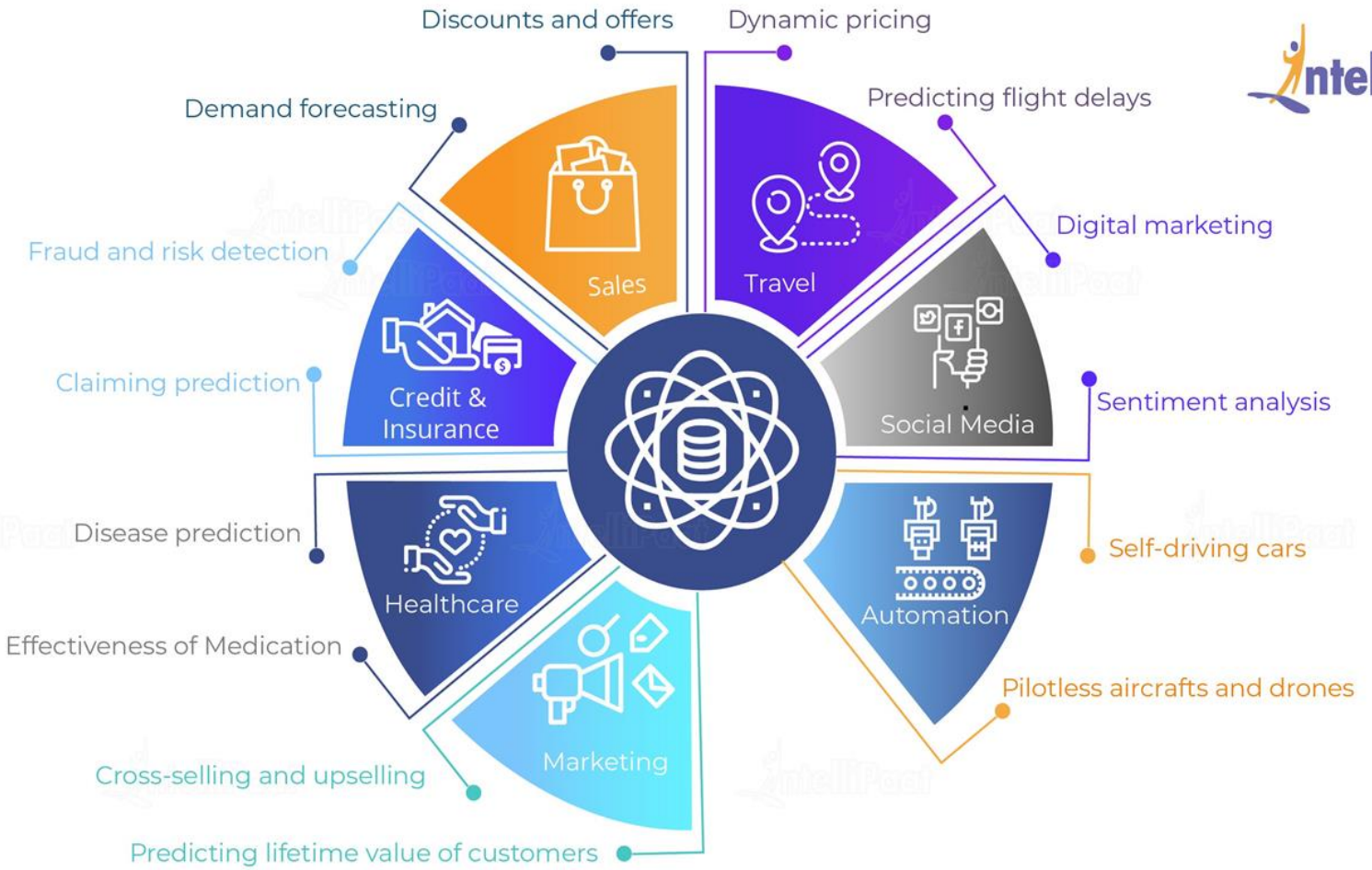
Data Analytics is Omnipresent



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Job Trends

ET Bureau

India should become a data analytics hub: Ravi Shankar Prasad

Ravi Shankar Prasad said the report is not just about digital inclusion but also an opportunity to do business in India.

Infosys invests additional $1.5 mn in data discovery firm

Earlier in January 2016, the Bengaluru-headquartered company had spent $4 million to pick up stake in the US-based firm.

ET Bureau

India to lead in data science job creation: Biocon Chief Kiran Mazumdar-Shaw

Kiran Mazumdar-Shaw pointed out how startup founders in India, who are data scientists, functioned very differently from their counterparts in the US.

ETCIO

Women leaders tend to be more collaborative: Nimilita Chatterjee, SVP- Data and Analytics, Equifax

In an interview with ETCIO.in, Nimilita Chatterjee, SVP- Data and Analytics, Equifax shares her views on how IT industry is adapting the women leadership and mentoring their skills for better

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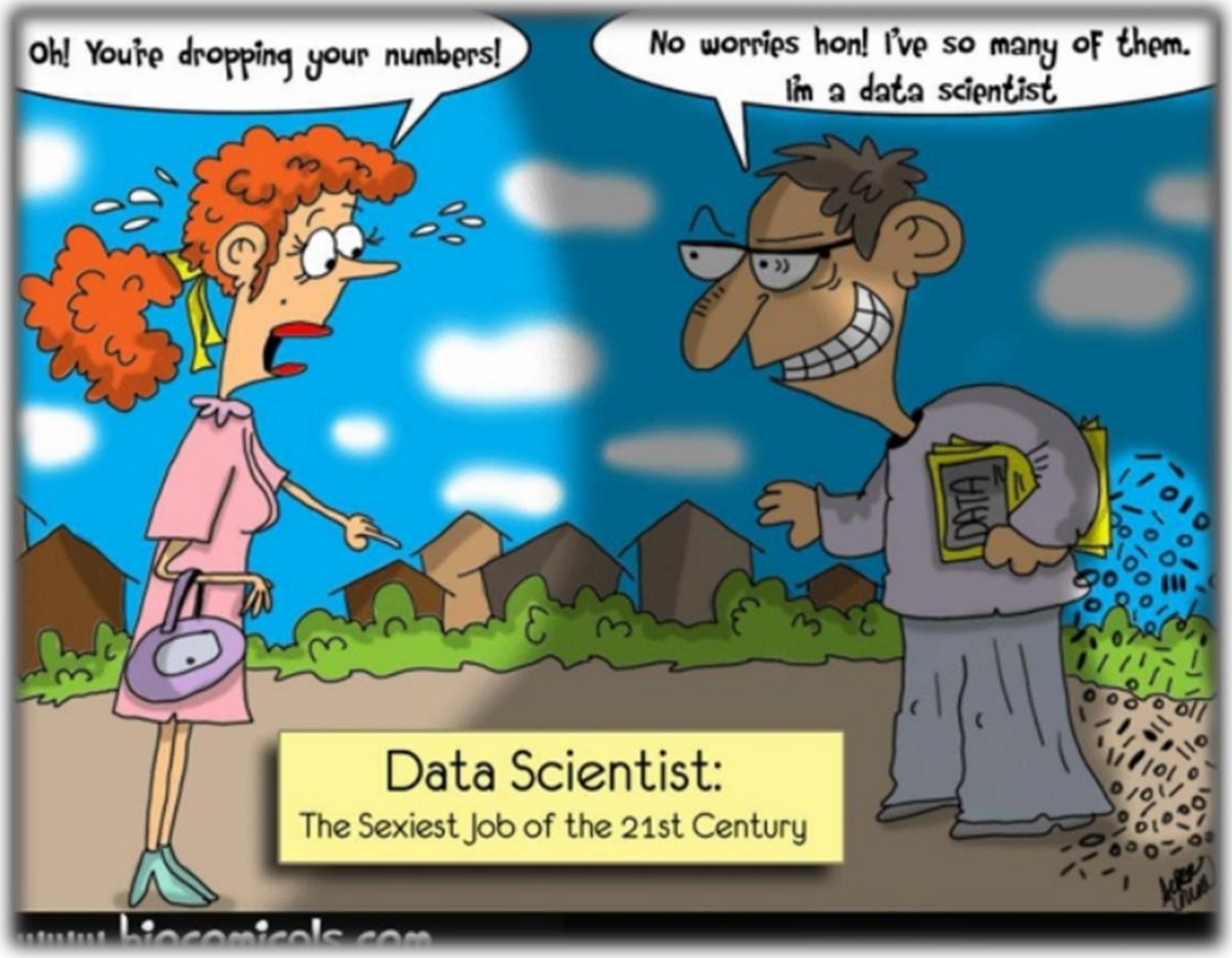
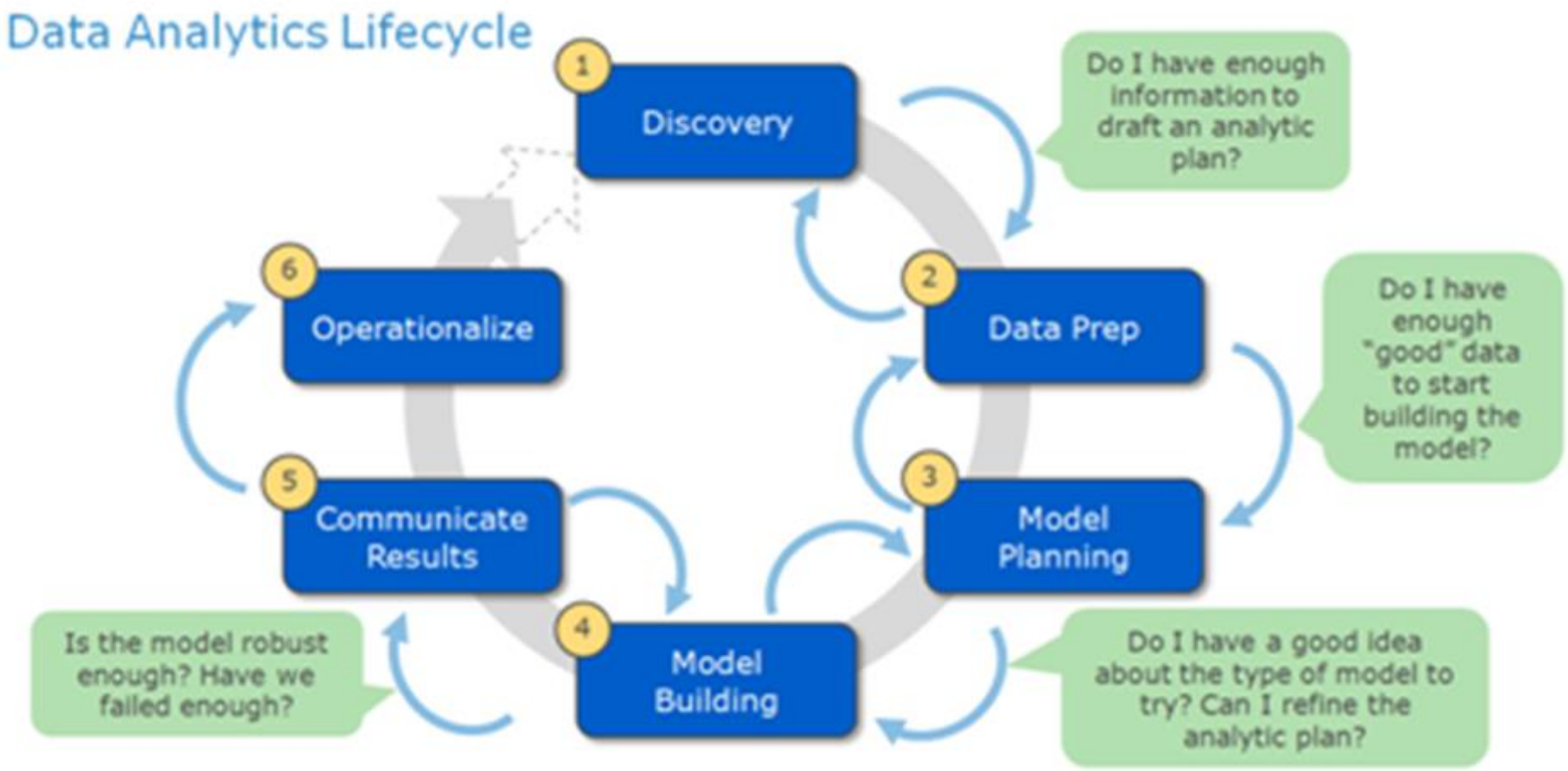


Data Analytics Lifecycle



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- A Computer Science Perspective

- **Data Collection (Big data and data engineering)**
- **Data Pre-Processing (Cleaning, SQL)**
- **Analysis(EDA etc)**
- **Insights(Machine Learning/Deep Learning)**
- **Visual Reports(Visualisations)**

Data analytics is the pursuit of extracting meaning from raw data using specialized computer systems. These systems transform, organize, and model the data to draw conclusions and identify patterns.

https://www.informatica.com/in/services-and-training/glossary-of-terms/data-analytics-definition.html

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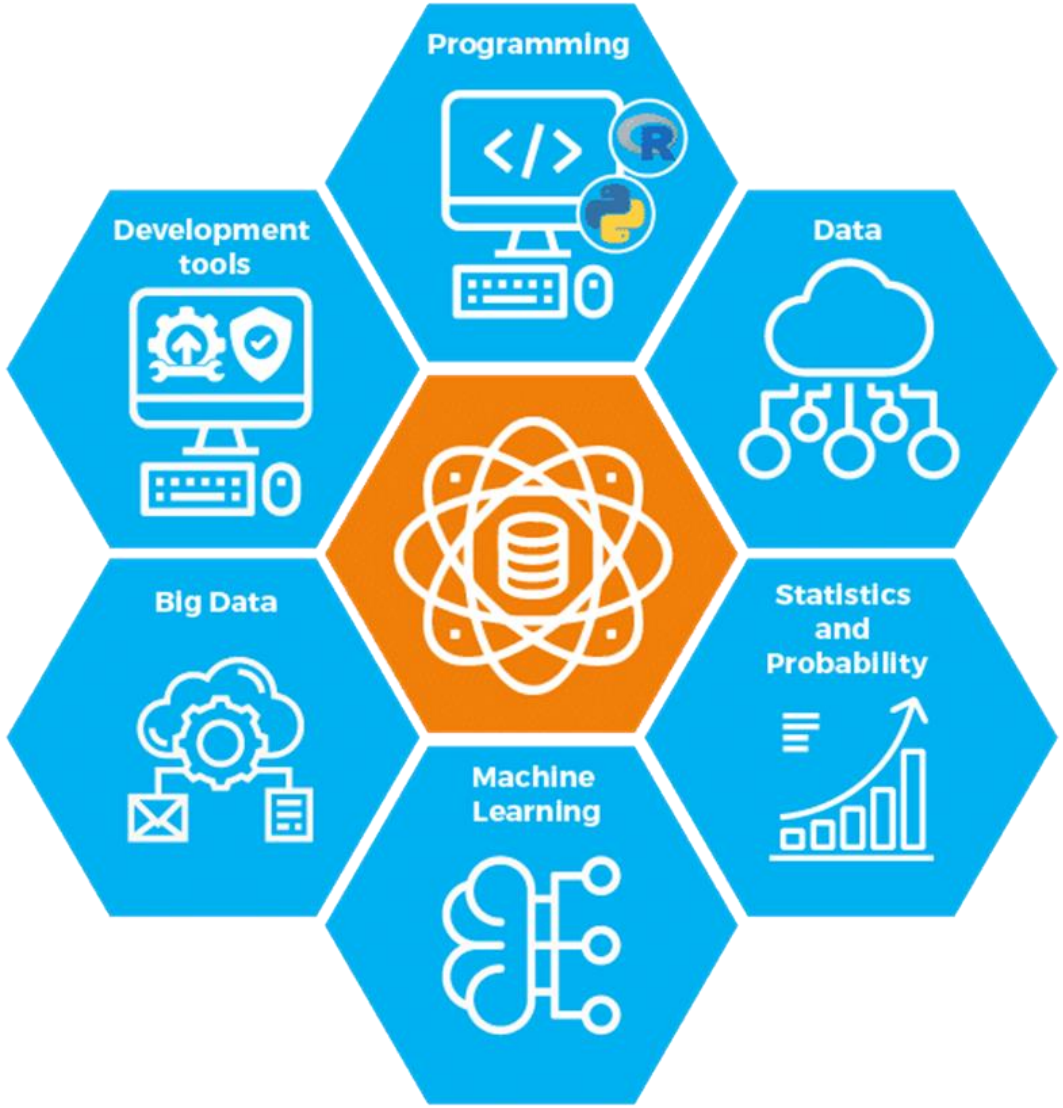
Skills Required



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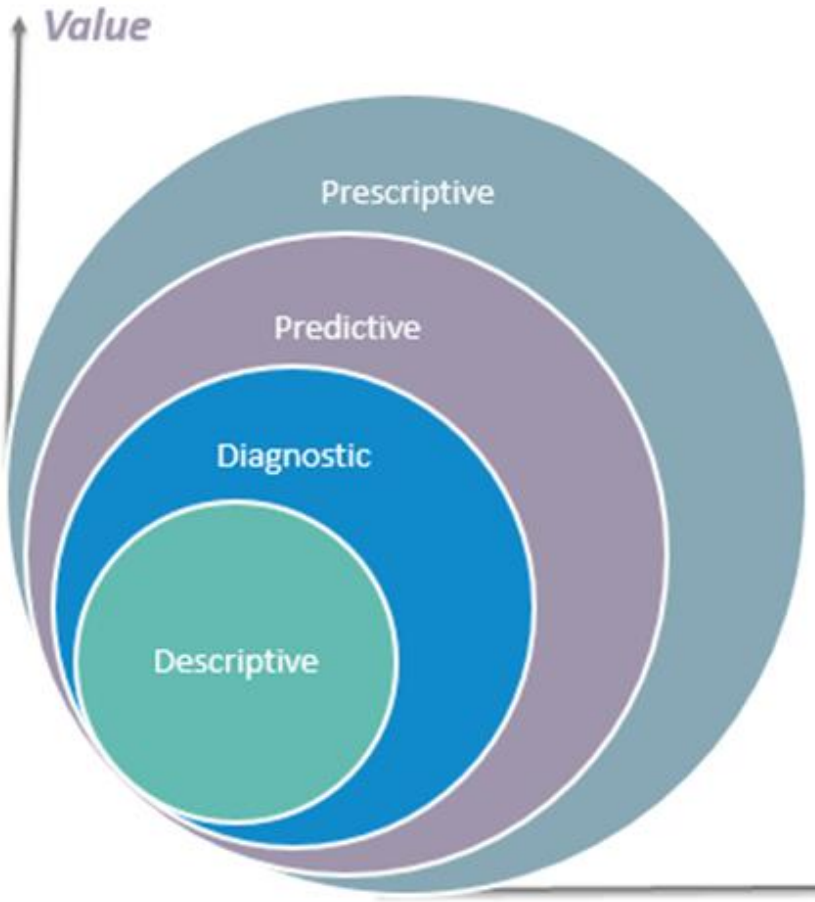
Course Coverage

4 types of Data Analytics



What is the data telling you?

Descriptive: ***What's happening in my business?***

- Comprehensive, accurate and live data
- Effective visualisation

Diagnostic: ***Why is it happening?***

- Ability to drill down to the root-cause
- Ability to isolate all confounding information

Predictive: ***What's likely to happen?***

- Business strategies have remained fairly consistent over time
- Historical patterns being used to predict specific outcomes using algorithms
- Decisions are automated using algorithms and technology

Prescriptive: ***What do I need to do?***

- Recommended actions and strategies based on champion / challenger testing strategy outcomes
- Applying advanced analytical techniques to make specific recommendations

Principa
www.principa.co.za

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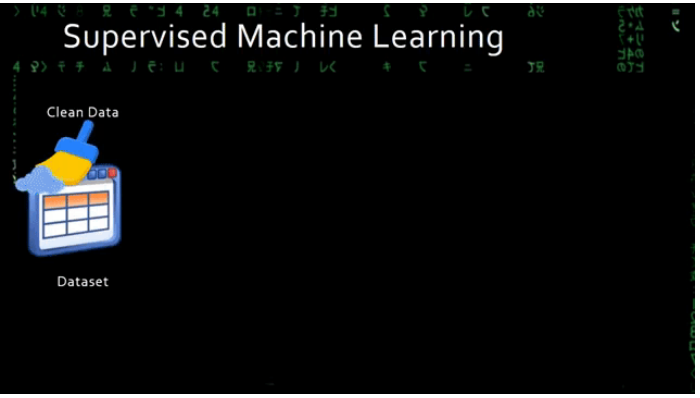
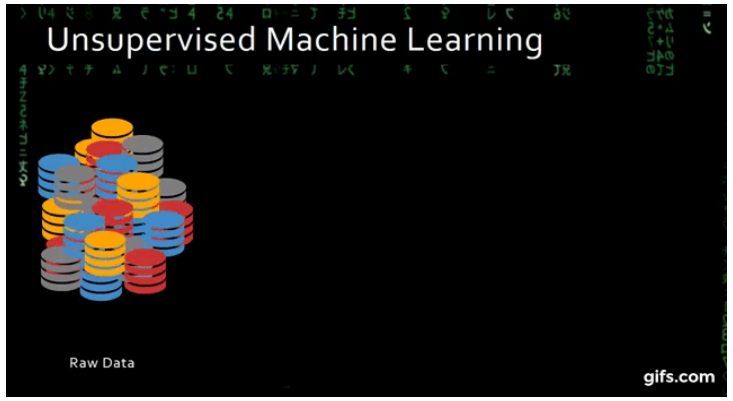
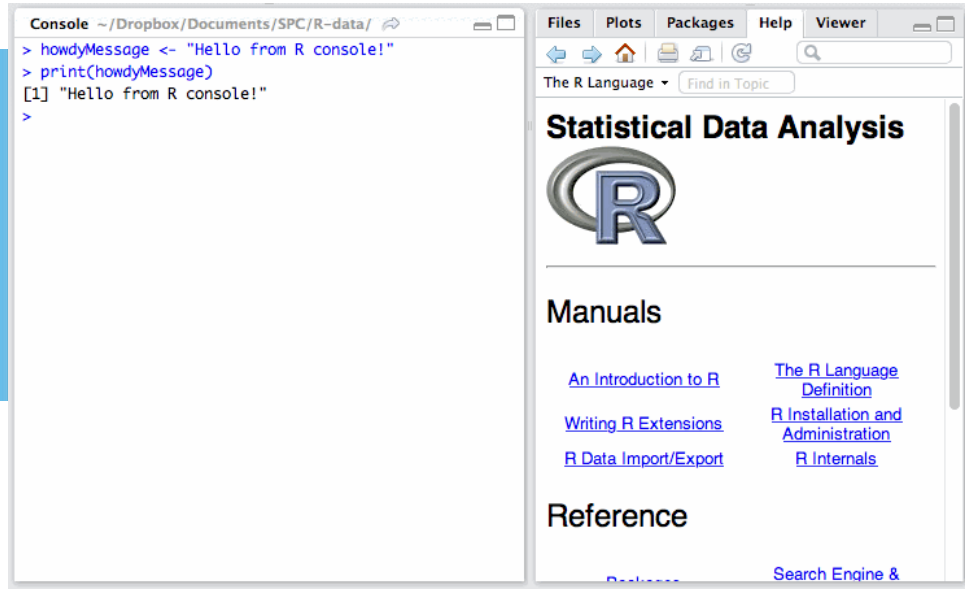
Course Coverage







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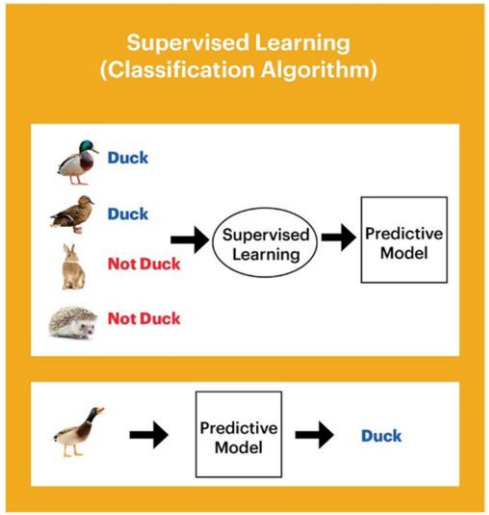
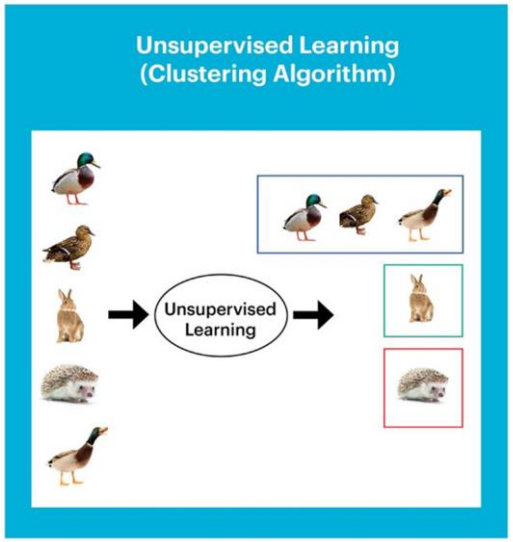
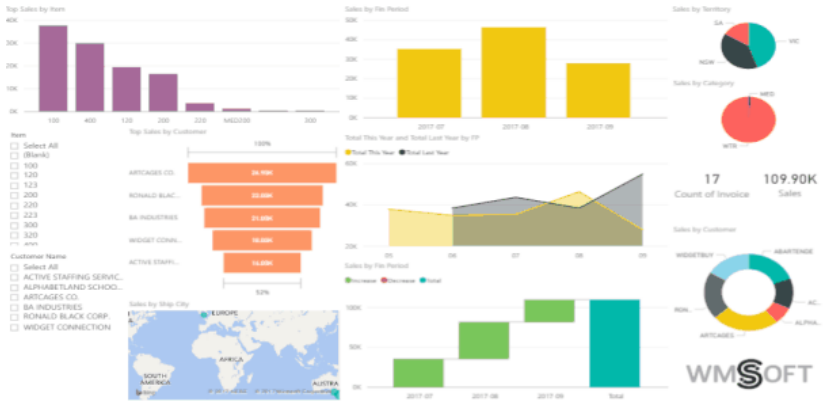
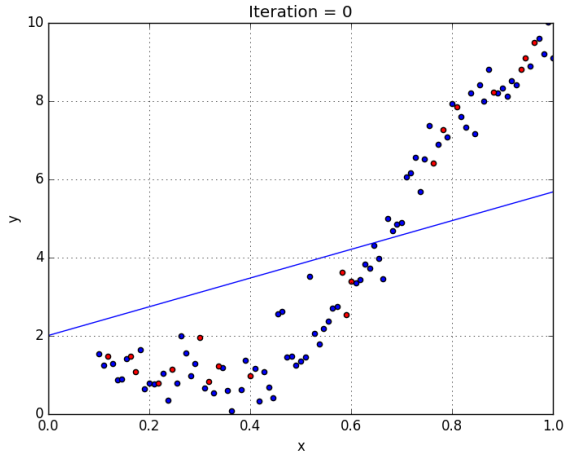
Course Outcome









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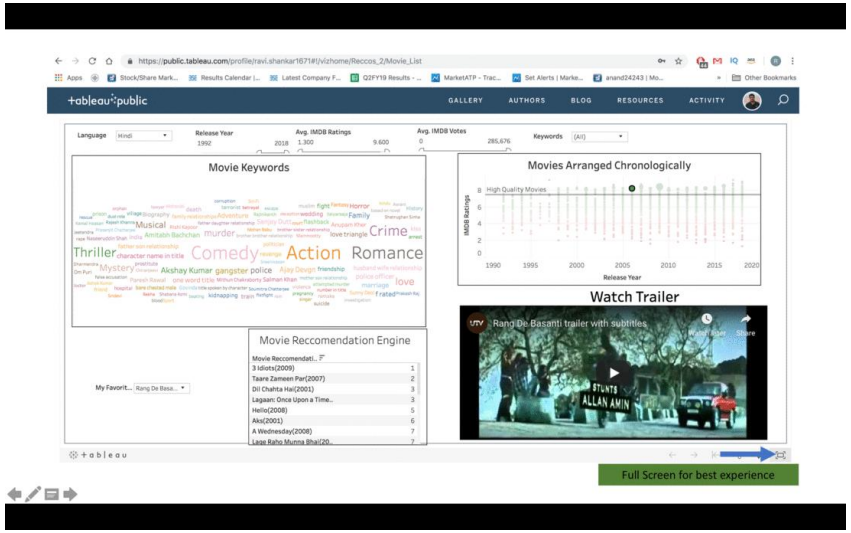
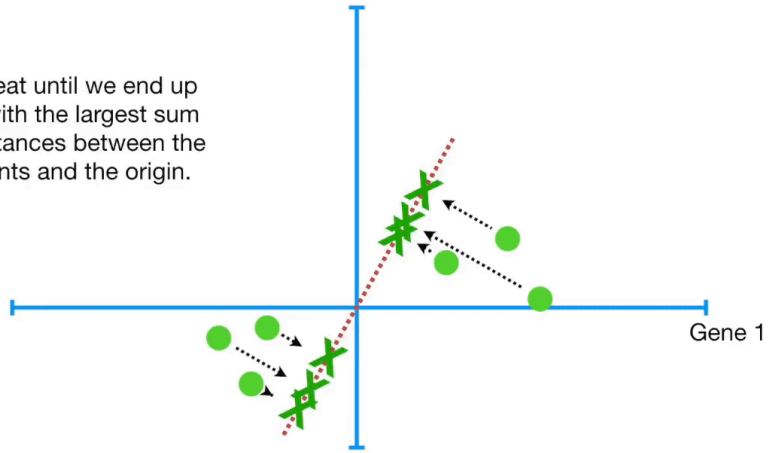


$d_1^2 + d_2^2 + d_3^2 + d_4^2 + d_5^2 + d_6^2$ = sum of squared distances = SS(distances)

…and we repeat until we end up with the line with the largest sum of squared distances between the projected points and the origin.



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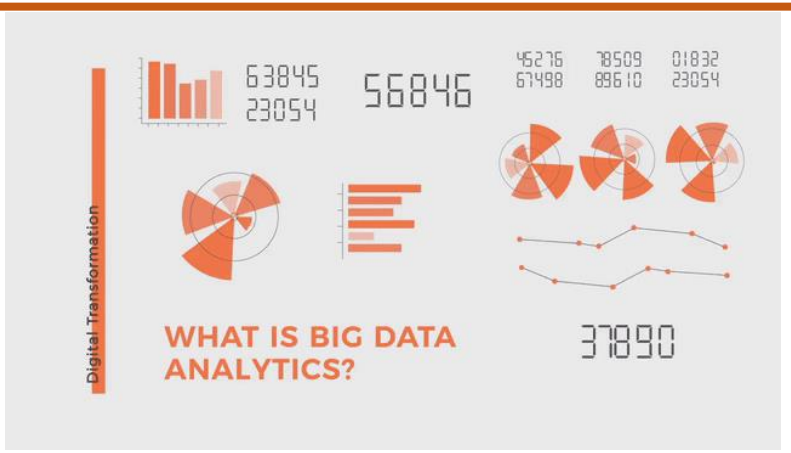
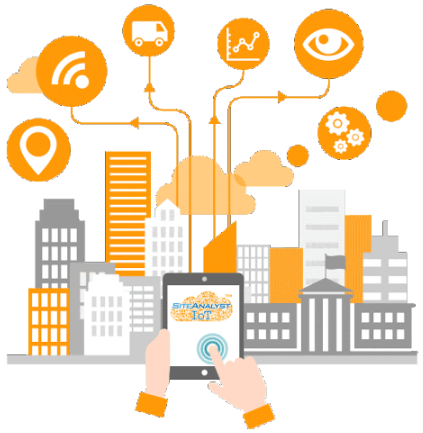
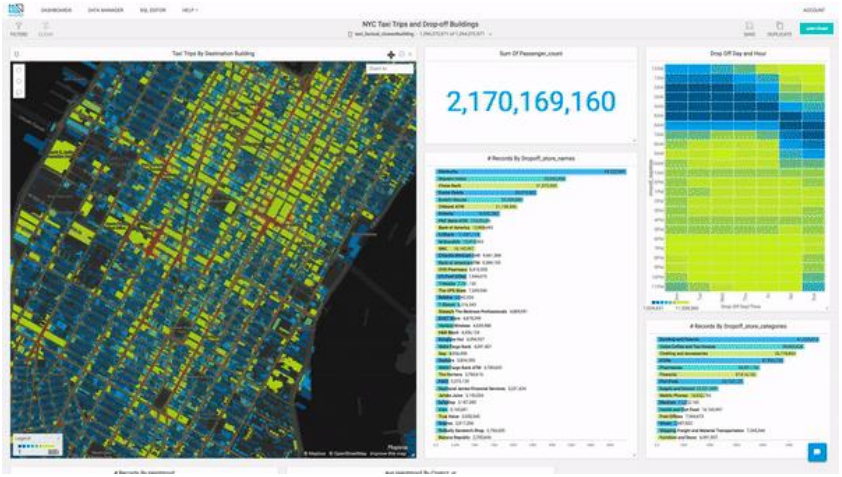
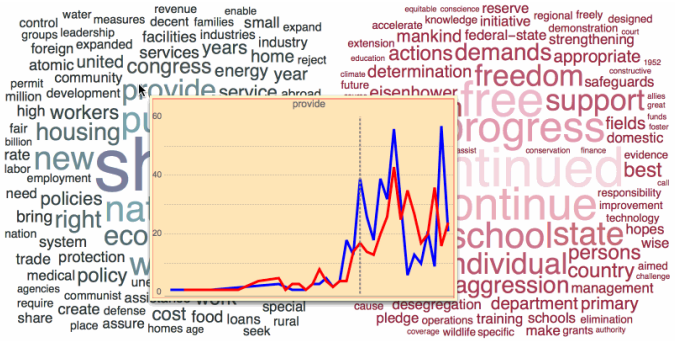
What's Next?









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"Business Analytics, The Science of Data-Driven Decision Making", U. Dinesh Kumar, Wiley 2017

Reference Books:

1: "Data Mining: Concepts and Techniques" by Jiawei Han, Micheline Kamber and Jian Pei, The Morgan Kaufmann Series in Data Management Systems, 3rd Edition.

2: "The Elements of Statistical Learning", Trevor Friedman, Robert Tibshirani and Jerome Hastie, Data Mining, Inference and Prediction, Springer 2001.

3: "Practical Data Science with R", Nina Zumel and John Mount, Manning Publications, 2014.

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THANK YOU

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