



upGrad
Raho Ambitious



#LifeKoKaroLift

SGC Coaching:

Articulate your Journey | Activate Students' Vigour| Accelerate Mutual Growth

*JumpStart to an engaging session with
your group!*

using these slides for reference

Key Roles Overview –(25 mins)

Know Career Tracks

Skills and competencies needed



Relevant Use cases–(45 mins)

Guiding Towards Your Desired Outcome



Activity Time!–(20 mins)

Set Individual Objective to accomplish outcomes

Identify opportunities of contribution

Introspection

Where do you want to be?

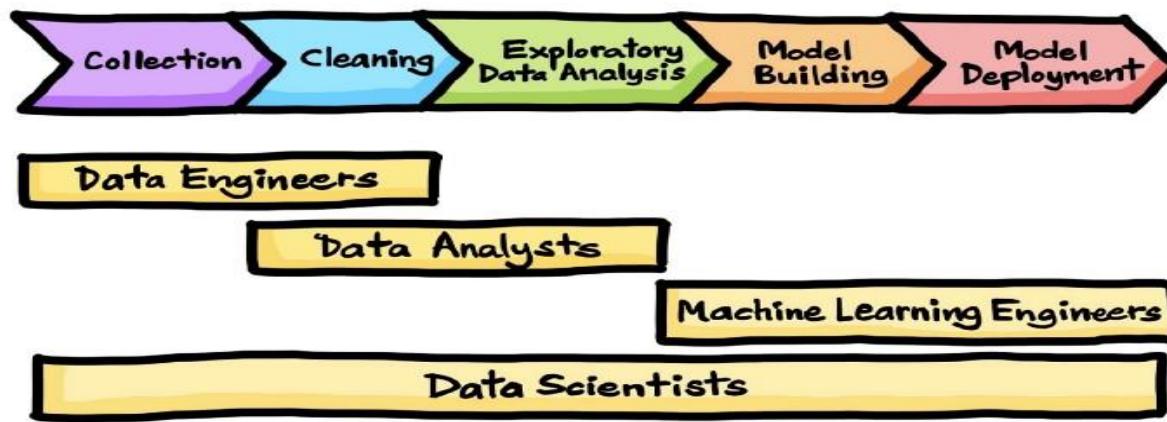
- Self-reflection on strength
- Topics of interest
- Key Aspiration

Benchmarking

Who inspire you in your network ?

- Their achievement
- Prior background
- Top Skills

THE DATA SCIENCE PROCESS



DATA ENGINEER

ROLE



Data Engineers are the one's who will ensure the required data pipelines are in place ensuring good quality of data and timely delivery of the data to everyone who needs to work with the data. Data Engineers work to prepare and make raw data more useful for analytical or operational uses

SKILLS



Data Warehousing, Ability to write, analyze, and debug SQL queries, Experience in working with Big Data platforms like Hadoop, Spark, Kafka, Flume, Pig, Hive, etc., Experience in handling data pipeline and workflow management tools like Azkaban, Luigi, Airflow, etc., Experience in handling stream-processing systems such as Storm and Spark-Streaming, Strong Communication Skills



CTC



The national average salary for a Data Engineer is ₹7,70,360 in India.



LANGUAGES/TOOLS

SQL, Python, Hive, Pig, Java, C++, Hadoop, Spark, Kafka, Azkaban, Airflow, Luigi, AWS, GCP, Azure

DATA/BI ANALYST

ROLE



Data Analysts are responsible for collecting, processing and analysing the data to help the company find insights from it which helps in taking business decisions. BI Analysts are nothing but Data Analysts but more focussed on the visualization and reporting aspect of it.

SKILLS



Programming skills in Python/R, Solid understanding of database management systems, Proficient SQL/HQL skills, Good data visualization skills and proficient with Tableau/PowerBI/QlikView, etc, basic understanding of predictive modelling



CTC



The national average salary for a Data Analyst is ₹5,07,612 in India.



LANGUAGES/TOOLS

SQL, Excel, Python/R, Tableau/PowerBI/QlikView, Basics of Big Data, Basics of Cloud

ML ENGINEER

ROLE



ML Engineers are mostly people from software engineering background who are responsible to take the data science use cases and make it deployable. They are also responsible for updating and maintaining the deployed ML models.

SKILLS



Understanding of data structures, data modeling and software architecture. Deep knowledge of math, probability, statistics and algorithms. Ability to write robust code in Python, Java and R. Familiarity with machine learning frameworks (like Keras or PyTorch) and libraries (like scikit-learn)



CTC

The national average salary for a Machine Learning Engineer is ₹7,68,375 in India.



LANGUAGES/TOOLS

Python, Machine Learning Algorithms, DL/NLP, Java, DBMS, Cloud Architecture, Big Data Architectures, AWS/GCP/Azure

DATA SCIENTIST

ROLE



Data Scientists are people with non linear mindset and are expected to use predictive modelling or descriptive analytics to solve a business problem. They are expected to know how to extract data, find insights, visualize it, create models and if needed how to make the solution production ready. They are usually expected to be good with predictive modelling .

SKILLS



Excellent programming skills in Python/R and its data science libraries(Pandas, Scikit Learn,etc),Experience with RDBMS and SQL, Good with data storytelling and visualization, Understanding of Big Data and Cloud systems, Good ML frameworks like Tensorflow,Caffe,etc



CTC

The national average salary for a Data Scientist is ₹9,16,462 in India..



LANGUAGES/TOOLS

Python/R, SQL, Tensorflow,Keras,Caffe,Big Data Tools, Cloud Architectures - AWS/GCP/Azure, Tableau/Qlikview/PowerBI

BUSINESS ANALYST

ROLE



Business Analysts are people who are responsible for liaising between business users and technologists to exchange information in a concise, logical and understandable way in coordination with the Technology team. This doesn't necessarily involve the use of data science skills but having data skills would likely make someone a more compelling candidate for almost any business.

SKILLS



Domain understanding, Requirement Gathering, Requirement Elicitation, Process Excellence, Wireframing, Prototyping, User Acceptance Testing, Documentation Prowess, Basic Data Analysis Skills



CTC

The national average salary for a Business Analyst is ₹6,00,000 in India.



LANGUAGES/TOOLS

Excel, Visio, SQL, Tableau, Wireframing tools like Axure RP/Visio

Data Analyst

Responsibilities

- Curate the data
- Visualize and report data

Tools

- Excel
- SQL
- Tableau

Skills

- Analytics
- Communication & Visualization

Business Facing

- Sometimes

Salary

\$65,000



Data Scientist

Responsibilities

- Source data
- Analyze data
- Run experiments

Tools

- Python
- R
- SQL

Business Facing

- Yes

Skills

- Analytics
- Communication
- Story-tell
- Model building
- Math
- Coding

Salary

\$120,000



Data Engineer

Responsibilities

- Build data pipelines and warehouse
- Manage scalability of data products

Tools

- Java
- C++
- Kubernetes
- Hadoop
- Spark
- Python

Skills

- Coding
- Model implementation

Business Facing

- Not Really

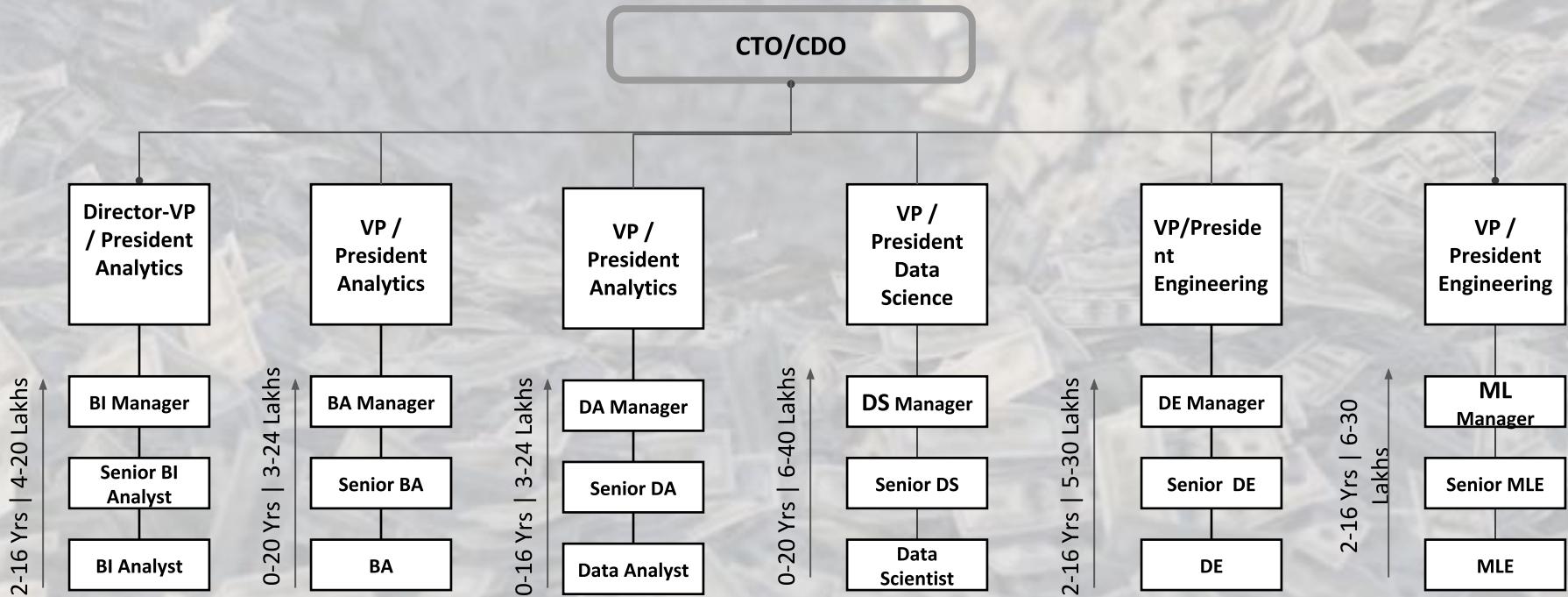
Salary

\$110,000

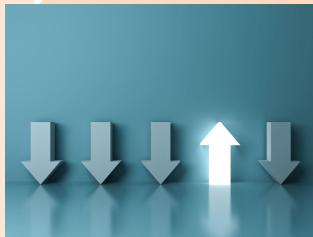
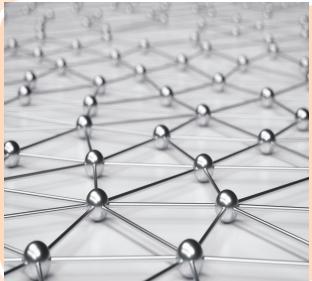


Math Magicians

ROLE HIERARCHY



Competencies needed (Soft Skills)



Data Engineer

- IT knowledge
- Process Centric
- Dealing with ambiguity

Data Analyst/ BI Analyst

- Eye for Detail
- Process Centric
- Analytical mindset

Business Analytics

- Business acumen
- Problem solving skills
- Stakeholder management

ML Engineer/ Data Scientist

- Sharp Analytical skills
- Result orientation
- Research mindset

How to Grow in Current Role?

How can you get promoted in the current role or get a hike in your salary?

Do you have the growth opportunity in your org/ plan to leverage your skills for senior roles elsewhere?

What is the current skill/ competency gap which bars you to play these roles already? How to grow relevance in chosen profile?

You can check following use cases as may be applicable:
[Recommender-systems](#)
[customer-support-on-twitter](#)
[Data Science Applications](#)



From ---- at Deutsche bank to Sr. Business Analyst (Deutsche Bank) 6+ years work ex



Shayak Roy | DS C7

I have done my engineering from Bhilai Institute of Technology. I joined Deutsche bank and upGrad's program has helped me get an internal transition to a Sr. Business Analyst at my company. The topics at upGrad's program are covered very clearly and doubts are clarified on discussion portal which helped me a lot. I really loved their learning platform.



Sr. Software Engineer, Legato Health
6+ years work ex



Zafar Ali Kazmi | DS C11

I am able to guide my team members better because of the skills acquired during the course of the program. I also bagged an opportunity to work on a relevant internal project at my company. I wrote a few technical blogs to showcase my learning which were appreciated by my manager.



From Sales & Marketing manager. (Tata Motors)) to Business Analyst (IHCL)
14+ years work ex



Shreyas Shrivatsan | DS C1

I saw a tremendous growth in my career and attribute upGrad's Data Science course for helping me get better in storytelling, following a more tangible process and changing my mindset. After the course when my company saw the value addition, they sponsored my entire course from upGrad.



Activity Time!

A Drop of Effort in right direction at the right time can bring transformation

- i. Understand how data can be leveraged (analysis / visualization / predictive modeling) in your current role and scan through the senior roles/ functions where data is leveraged currently in your organization

- ii. Which projects/ use cases within these functions are critical to business and are aligned with expected skills for your track? E.g. Tracking successful campaigns using AI/ basic ML

- iii. Think of top 1-2 cases where you can contribute and showcase your skills and readiness for growth.

- iv. Reach out to your management to get roped in NOW, e.g. presenting an idea to manager, lead cross-functional initiatives



Business Background

- **ITES Sector**
- Multiple client requests running together hence allocation of resources/ staffing is critical
- Typical time to close projects ranges ~2-10 weeks (high variability)

Business Need

- To keep track of all projects
- Predict expected project time/ resource commitment
- Alert for any outages/ expected anomalies to PMO/ Leadership
- Focus on productivity improvement

Challenge

- Lack of proper data architecture in place
- Data across functions is not in sync

Explore

Connect with respective PMO team to conceptualize the idea and discuss possible options.

Define

Evaluate setting up cloud architecture/ simplified data analytics reporting as per feasibility.
Build an expected dashboard design to share anomalies

Present

Finalize data/ resources availability and other stakeholders' information for consolidation.
Once aligned, present your prototype to management for next steps.

External Use-case Examples To Consider

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Marketing

Objective: Personalized Marketing

Background: This is a system used by retailers to integrate personalized recommendations based on their users browsing history, past purchases, likes, and dislikes. It also lets retailers create highly targeted campaigns that increase ROI.

Challenge: All this is possible if retailers have data and they have the ability to extract meaningful insights from it.

Resources:

<https://data-flair.training/blogs/data-science-in-retail/>

<https://github.com/Prakhar-FF13/Customer-Analytics>

Ecommerce

Objective: Dynamic pricing

Background: Company wants to improve its pricing mechanism and adapt to competitive scenario by offering most attractive pricing on a sustained basis using Machine Learning and improve your KPI. The intent is to continuously learn from new information and detect new demands and trends.

Challenge: Create ML algorithm which is able to detect the new patterns ongoing and build dynamic pricing system.

Resources:

<https://addepto.com/best-machine-learning-use-cases-ecommerce/>

<https://www.kaggle.com/viveknium/dynamic-pricing-with-feature-engineering>

- [Credit Risk Analysis \(EDA\)](#)
- [Visualization use case- COVID](#)

Sample Job Descriptions (JDs)

- [Data Analyst JD](#)
- [Business Analyst JD](#)
- [Data Engineer JD](#)
- [Data Scientist JD](#)