upGrad

#LifeKoKaroLift
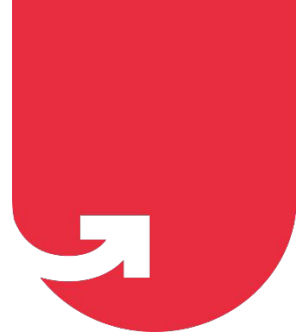
SGC Coaching:

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

JumpStart to an engaging session with your group!

using these slides for reference

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

ML Value Chain

AI/ML Researchers Computer Vision Engineer	Data Scientists	ML Engineers
Research & Develop	**Implement**	**Large scale deployment**

Research & Develop

- Research and develop machine learning systems that help train and/or deploy models.

- New ML algorithms to aid in speech processing and recommendation systems.

- Quickly prototype new ideas/technologies to create proof of concept/ demos

Implement

- Selecting features, building and optimizing classifiers using machine learning techniques.

- Data mining using company's data along with third party sources of information when needed.

- Processing, cleansing, and verifying the integrity of data used for analysis.

Large scale deployment

- Develop machine learning models and DS techniques.

- Collaborate with data engineers to develop data and model pipelines and design distributed systems.

- Write production-level code and bring code to production. Engage in code reviews.

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 and process data to find valuable 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 .

CTC

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

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

LANGUAGES/TOOLS

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

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.

CTC

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

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).

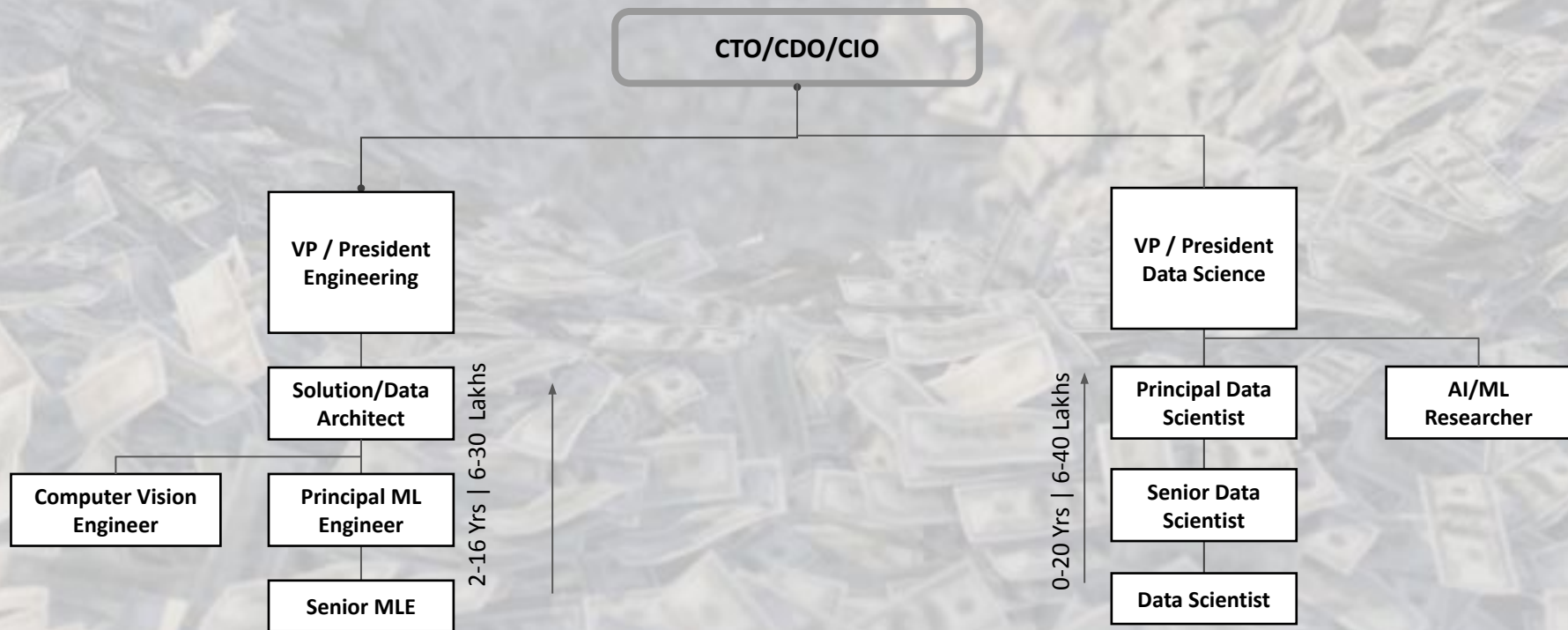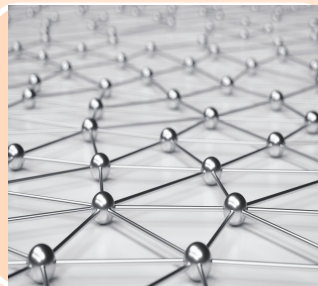## LANGUAGES/TOOLS

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

ROLE HIERARCHY

Competencies needed (Soft Skills)

ML Engineer

- IT knowledge
- Process Centric
- Structural design

Computer Vision Engineer

- Research mindset
- IT knowledge
- Process- centric
- Conceptual knowledge

AI/ ML Researcher

- Research mindset
- Ideation and concepts
- Fundamental knowledge

Data Scientist

- Problem solving skills
- Result orientation
- Client engagement

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

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

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

You can check following use cases as may be applicable:

Recommender-systems

ML Use cases across industries

Data Science Applications in Media

Narendra Kumar | ML C-6

Promoted from Tech lead to Decision Engineer,Decision Resource
9 years work ex, 30% hike

I have been working as a Tech Lead at Decision Resource group with 9 years of experience. been promoted to the position of **Principal Engineer** within my current organization with a hike of 30% in April 2020. upGrad' course and suggestions for doing freelance projects and writing blogs/ articles have helped me immensely.

Zafar Ali Kazmi | DS C11

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

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.

Shreyas Shrivatsan | DS C1

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

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.

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

i. Understand how data can be leveraged for predictive modeling and AI in your current role and scan through the senior roles/ functions where ML based algorithms are 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, opportunity to design AI system.

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 to keep track of all projects as per technical feasibility.
Build an expected ML Algorithm based system that sends alerts to identify anomalies

Present

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

Finance

Objective: Credit Card Fraud Detection

Background: Company wants to detect fraud transaction cases in a month through anomaly detection. These frauds are a big setback to the business and incur huge losses along with issues in credibility.

Challenge: The data is quite unbalanced and we do not have label sufficient data points and train the model. Implementation of this model needs to be at real time basis to prevent issues.

Resources:
https://www.kaggle.com/mlg-ulb/creditcardfraud
Cloudlabs Assessment for Fraud detection

Ecommerce

Objective: Dynamic pricing

Background: Company wants to improve its pricing mechansim 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

- [Deep Learning - Edge Detection Project](#)

- [Customer-support-on-twitter](#)

Sample Job Descriptions (JDs)

- [ML Engineer JD](#)

- [Senior Data Scientist JD](#)

- [ML Researcher JD](#)