

EDA CONTEST

HR PROJECT

CONTENTS



About the project

A detailed description about the project.



About the Data

Introduction to data set that is been used for project.



Insights to find?

What are the objectives and insights that are to be found out?



Steps for EDA and cleaning data

Various steps used for data cleaning and EDA process.



Visual analytics

Different visuals and summaries to understand data well



Key Findings

Insights we found out according to various questions.



Dashboard view

The view of dashboard that is been created



ABOUT THE PROJECT

ABOUT PROJECT

Every company has a HR Department which deals with various recruitment and placement related work of the company. Here in this project we have a huge data set in from which we are going to extract insights which can be useful for HR department to work on and to gain knowledge about the recruitment process of the market. We have extracted many different insights which we will observe further in the report.



ABOUT THE DATA

ABOUT DATA SET

The dataset is about the job details data for analytics industry. The companies in the dataset are Hong Kong based companies. Data consist of various job description for various analytics job roles like Data Scientist, Data analyst, Business Intelligence, Machine Learning Engineer, Data Engineer. The Dashboard made at the end is for the HR Team of a company.

The dataset has 6 separate dataset of different days which was combined to make a final data set. It is a huge dataset with many columns and other attributes

DETAILS OF DATASET

1

JOB TITLE

The Job Title column contains the name of the jobs given by a particular company.

2

COMPANY

The Company column contains the name of the companies who are providing different types of jobs.

3

SALARY

The Salary column contains the salary for various job roles. Salary column has many null values as many companies do not reveal their salaries publicly.

4

JOB DESCRIPTION

The Job Description column contains the detailed description of the job given by particular companies providing the jobs.

5

CAREER LEVEL

The column contains various career levels like Entry Level, middle level, senior level, etc. based on number of years of experience.

DETAILS OF DATASET

6

QUALIFICATION

The Qualification column contains various educational qualification an individual need for a job for example degree, graduation, post graduation, etc.

7

YEARS OF EXPERIENCE

The Years of Experience column contains the minimum eligibility in terms of experience of years for various job roles

8

JOB TYPE

The Job Type column contains the type of jobs required for example full time, internship, part time, contract, etc.

9

COMPANY WEBSITE

In the company website there are various website links where an individual can apply.

10

INDUSTRY

The Industry column is the domain to which a particular job role belongs for example Finance, HR, IT, etc.

DETAILS OF DATASET

11

SEARCH TERM

The Search Term is the column which contains various analytics domain job belongs to for example Data Science, Data Analytics, BI, ML, etc.

12

DATE POSTED

The Date posted column contains the date when a particular job was posted.

13

DATE SCRAPPED

The Date scrapped column contains the date when the particular dataset was scrapped from some recruitment websites..



INSIGHTS TO
FIND OUT?

INSIGHTS TO BE FOUND?

- 1 What are total number of jobs available?
- 2 What are total number of companies providing jobs?
- 3 What are total domains for various domains?
- 4 What are various career level and it's distribution across various jobs?
- 5 Which company is providing highest number of jobs?

INSIGHTS TO BE FOUND?

- 6 Which company is providing highest number of jobs?
- 7 Which domain has the highest number of jobs?
- 8 What are minimum required qualification for job roles?
- 9 What are various job types for different job titles?
- 10 Which are TOP 5 companies with highest jobs?



STEPS FOR CLEANING DATA AND EDA

1. REMOVING UNECESSARY COLUMNS

1

REMOVING LOWER SALARY RANGE & UPPER SALARY RANGE

The column is of no use hence we can replace the columns using remove column option of Power BI.

2

REMOVING DATE SOURCE COLUMN

The column is of no use hence we can replace the columns using remove column option of Power BI.

2. REMOVING NULL VALUES AND ERRORS

1

REMOVING NULL VALUES AND ERRORS AND MISSING VALUES FROM COLUMNS

There are various null values, errors and missing values in the columns which we can delete using various options in Power BI.

2

REMOVING NOT SPECIFIED VALUES FROM THE COLUMNS

There are many columns which has the value Not Specified values which are of no use and can create problem while changing data types and other calculations hence we will remove that values from the data set.

3. CHANGING DATA TYPES

1

CHANGING DATA TYPE OF YEAR OF EXPERIENCE

The column was having a string data type hence we can change it to whole number using change data type option.

2

CHANGING DATA TYPE OF DATE COLUMNS

The data formats were in string type hence we have changed it to date type using change data type option

4. REPLACING VALUES

1

REPLACING VALUES IN EXPERIENCE COLUMN

The Experience table was having a value -1 which was suppose to be 1 so changed the value -1 to 1 using Replace Value option.

2

REPLACING VALUE IN QUALIFICATION COLUMN

The Qualification column has two qualification name Non-Degree Tertiary and Non Degree Tertiary so we can replace Non Degree Tertiary with Non-Degree Tertiary as they represent same qualification.

3

JOB TYPE

The Job Type column contains the type of jobs required for example full time, internship, part time, contract, etc.

5. CREATING DATE TABLE USING M LANGUAGE

1

CREATING DATE TABLE USING M LANGUAGE

We need a date table to perform date operations hence we can create Date Table using the following code.

Structure Calendars Relationships Calculations																
Date	Year	QuarterOfYear	MonthOfYear	DayOfMonth	DateInt	MonthName	MonthInCalendar	QuarterInCalendar	DayInWeek	DayOfWeekName	WeekEnding	Week Number	MonthnYear	QuarternYear		
01 August 2021	2021	3	8	1	20210801	August	Aug 2021	Q3 2021	6	Sunday	01 August 2021	31	20210800	202103		
02 August 2021	2021	3	8	2	20210802	August	Aug 2021	Q3 2021	0	Monday	08 August 2021	32	20210800	202103		
03 August 2021	2021	3	8	3	20210803	August	Aug 2021	Q3 2021	1	Tuesday	08 August 2021	32	20210800	202103		
04 August 2021	2021	3	8	4	20210804	August	Aug 2021	Q3 2021	2	Wednesday	08 August 2021	32	20210800	202103		
05 August 2021	2021	3	8	5	20210805	August	Aug 2021	Q3 2021	3	Thursday	08 August 2021	32	20210800	202103		
06 August 2021	2021	3	8	6	20210806	August	Aug 2021	Q3 2021	4	Friday	08 August 2021	32	20210800	202103		
07 August 2021	2021	3	8	7	20210807	August	Aug 2021	Q3 2021	5	Saturday	08 August 2021	32	20210800	202103		



VISUAL ANALYTICS AND FINDINGS

SUMMARY OF DATA

Total number of jobs

1979

Total companies

719

Total industry

50

There are different jobs available and various companies and industries. The summary below shows the Total summaries.

SUMMARY OF DATA

Total Career Level

3

Total analytics field

5

Total Job Types

35

There are various job titles similarly there are various Career level, various fields of job and various job types which is been shown below.

COMPANY AND DOMAIN WITH HIGHEST NUMBER OF JOBS



HKT and **Michael Page** are the companies with highest number of Job Titles. They both have **25** jobs.



Human Resources Management/Consultancy is the domain with highest number of jobs, with **482** different jobs.

TOP 5 COMPANIES AND TOTAL JOBS

RANK	NAME OF THE COMPANIES	TOTAL JOBS
1	HKT, Michael Page	25
2	Robert Walters (HK)	24
3	Page Group Hong Kong	23
4	Dah Sing Financial Group	19
5	Walters People	18

CAREER LEVEL

Total Career Level

3

Career level is the type of job work you are going to get according to years of experience you have.

There are three types of Career Level that are:

1

Entry Level Jobs

Entry level jobs are the job level for fresher's or people entering a new domain.

1

Middle Level Jobs

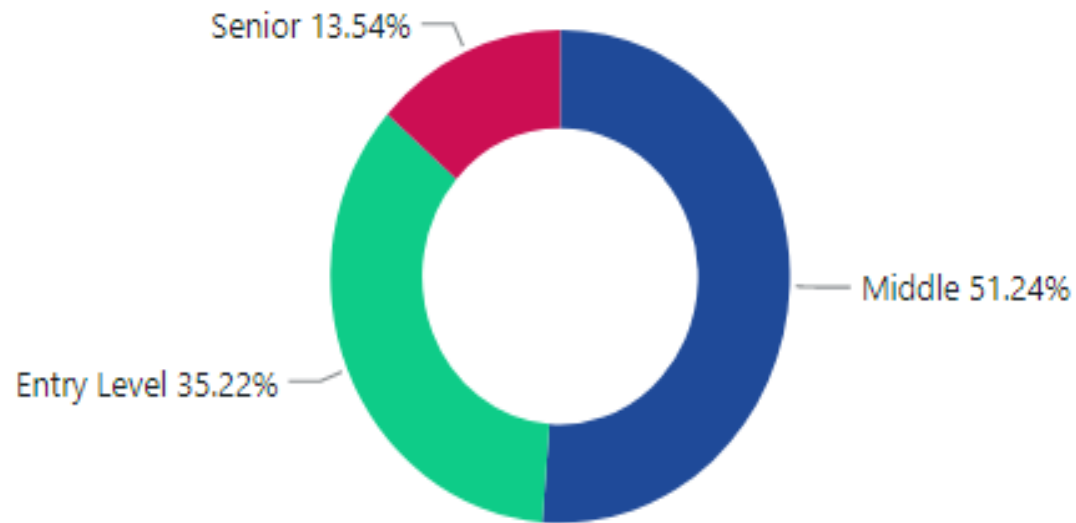
Middle level jobs are the job level for the people with some years of experience in a particular domain.

1

Senior Level Jobs

Senior Level jobs are the job level for the people who have many years of experience in particular domain and they can work for higher job post like manager, etc.

VARIOUS JOB TYPES FOR DIFFERENT JOB TITLES



KEY INSIGHTS

There are various career level according to requirement of the job. Career level depends upon the years of experience of an individual.

According to the visual **Entry Level Jobs** shares **35.22%** of job share. **Middle Level Jobs** has the **highest shares** with **51.24%**. **Senior Level Jobs** has **13.54%**.

Companies has various job types for various job titles.

VARIOUS JOB TYPES FOR DIFFERENT JOB TITLES



ENTRY LEVEL JOBS



Company with highest number of Entry Level job is **China Mobile Hong Kong**, with **10** Entry Level Jobs.



Education industry has highest number of Entry Level job, with **10** entry level jobs.

MIDDLE LEVEL JOBS



Company with highest number of Middle Level job is **Ambition**, with **9** Middle Level Jobs.



Accounting/Audit/Tax services has highest number of Middle Level job, with **17** Middle level jobs.

SENIOR LEVEL JOBS



Company with highest number of Senior Level job is **A.S. Watson Retail (HK) Limited** , with **5** Senior Level Jobs.



Banking industry has highest number of Senior Level job, with **6** Senior level jobs.

JOB ROLES LEVEL

Total Analytics field

5

There are five types of Career Level that are:

1

Data Scientist Jobs

2

Data Analyst Jobs

3

Data Engineer Jobs

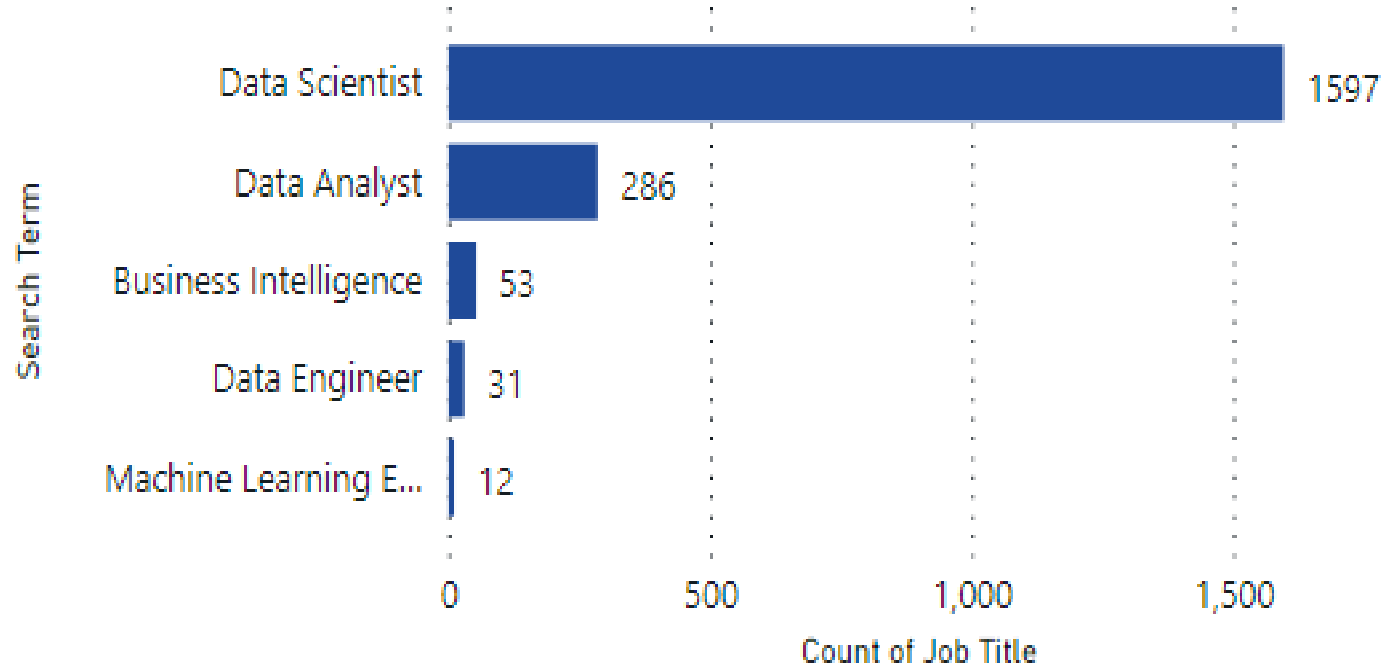
4

Business Intelligence Jobs

5

Machine Learning Engineer Jobs

JOB ROLE ANALYSIS



KEY INSIGHTS

From the above graph we can observe that the **Data Scientist** has highest number of job roles with **1597 jobs** and **Machine Learning Engineer** has least that is **12 jobs**. Second highest is **data analyst** with **286 job roles**. **Business Intelligence** and **Data Engineer** are close with **53** and **31** job roles.

Data Science
1597

Data Analyst
286

Business Intell..
53

Data Engineer
31

ML Engineer
12

COMPANY WISE INSIGHTS



IT solutions Limited is the highest which has 21 job opening in data science role.



PERSOKELLY HongKong is the highest which has 6 job opening in data analyst role.



Many industries has only single job requirement in data engineer job role.



Many industries has only single job requirement in data engineer job role.



Many industries has only single job requirement in business intelligence job role.

KEY INSIGHTS

Most of the companies prefer Data Scientist and Data analyst jobs because rest of the job roles are covered in both the job roles

DOMAIN WISE INSIGHTS



Information Technology domain is the highest which has **375** job opening in data science job role.



Human Resources/Consultancy domain is the highest which has **97** job opening in data analyst job role.



Tellecomunnication domain is the highest which has **7** job opening in data engineer job role.



Information Technology domain is the highest which has **4** job opening in machine learning engineer role.



Financial Services domain is the highest which has **4** job opening in business intelligence role.

ENTRY LEVEL WISE INSIGHTS



Data Scientist has 564 entry level jobs with Manpower services HongKong has highest jobs.



Data Analyst has 105 entry level jobs with ATAL Engineering having the highest..



Data Engineering has 13 entry level jobs with HGC Global Communication limited having the highest jobs.



Machine Learning Engineering has 4 entry level jobs.



Business Intelligence has 10 entry level jobs.

MIDDLE LEVEL WISE INSIGHTS



Data Scientist has **822** middle level jobs with **IT Solution Limited** having highest jobs.



Data Analyst has **136** middle level jobs with **Randstad HongKong** having the highest..



Data Engineering has **16** middle level jobs.



Machine Learning Engineering has **7** middle level jobs.



Business Intelligence has **33** middle level jobs.

SENIOR LEVEL WISE INSIGHTS



Data Scientist has **211** senior level jobs with **Michael Page** having highest jobs.



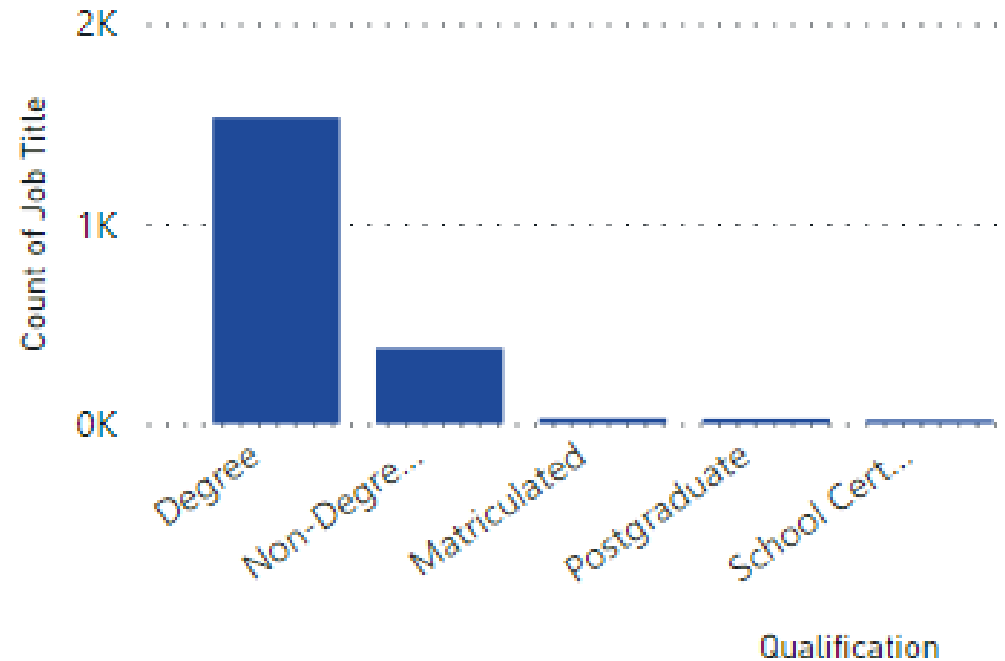
Data Analyst has **45** senior level jobs.



Business Intelligence has **10** senior level jobs.

REQUIRED QUALIFICATION FOR JOBS

Many people takes a degree or post graduation degree for jobs. Lets study the distribution of various companies across various qualification.

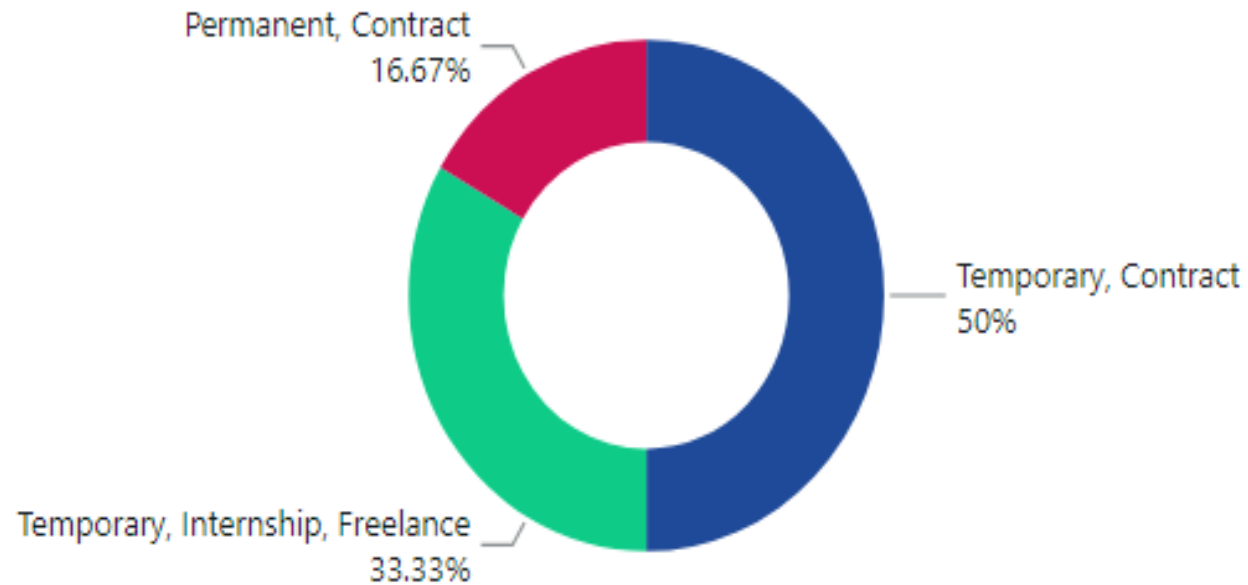


KEY INSIGHTS

From the above visual we can observe that the more companies require a **Degree** for various roles. Comparison to **Non-Degree** its not even half of the Degree. There are also other qualification involved such as **Matriculated, Post Graduation and School Certificates**.

VARIOUS JOB TYPES FOR DIFFERENT JOB TITLES

Companies has various job types for various job titles.



KEY INSIGHTS

There are various job types like permanent jobs, temporary jobs, contract based jobs, freelancing, internships, etc.

The visuals shows the distribution of various job roles across various job titles. **50%** of Jobs are **Temporary and Contract** based. **33.33%** jobs are **Temporary, Internship and Freelancing** jobs. **Permanent Contract** based jobs have **16.67%** share.



KEY INSIGHTS

INSIGHTS TO BE FOUND?

- 1 There are **1979 jobs** available.
- 2 **719 companies** are providing jobs.
- 3 There are round **50 different domains** in which jobs are provided
- 4 **HKT** and **Michael Page** are the companies which highest job opening.
- 5 **Human Resources Management/Consulting** is the domain which has highest number of jobs.

INSIGHTS TO BE FOUND?

- 6 Middle level jobs has the highest opening with 1014 jobs.
- 7 Data Science has highest job titles followed by Data analyst.
- 8 ML Engineer has the least job titles.
- 9 Most companies prefer individuals with degree for their job roles
- 10 Most job types are temporary contract based.



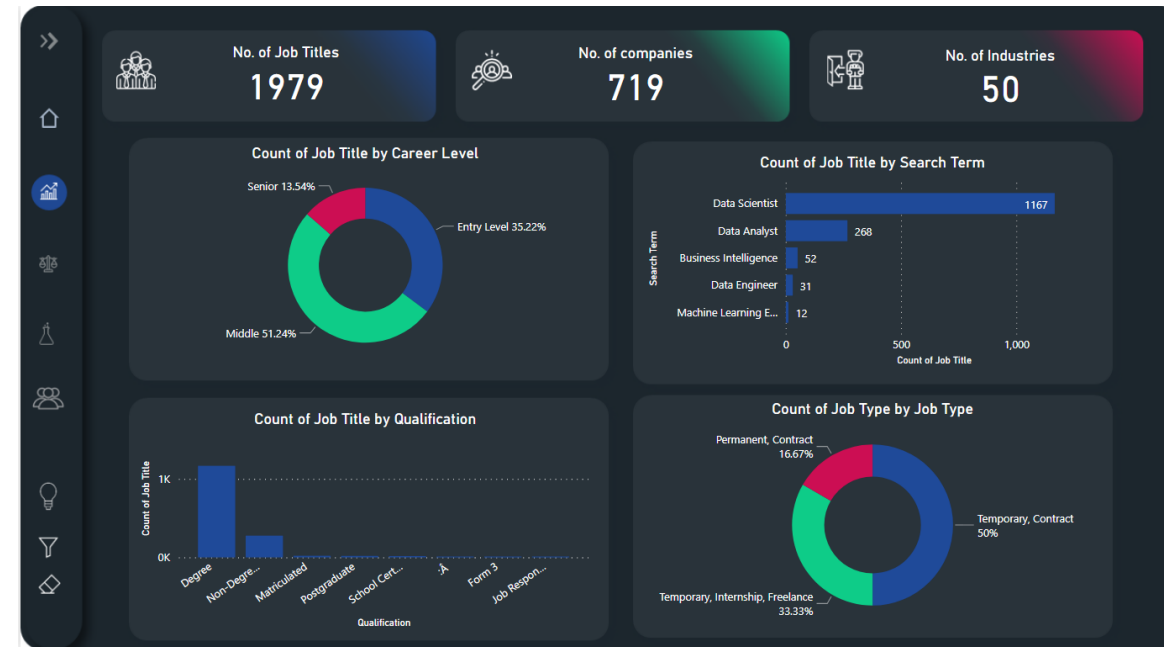
DASHBOARD

DASHBOARD PAGES VIEW

HOME PAGE OF THE DASHBOARD

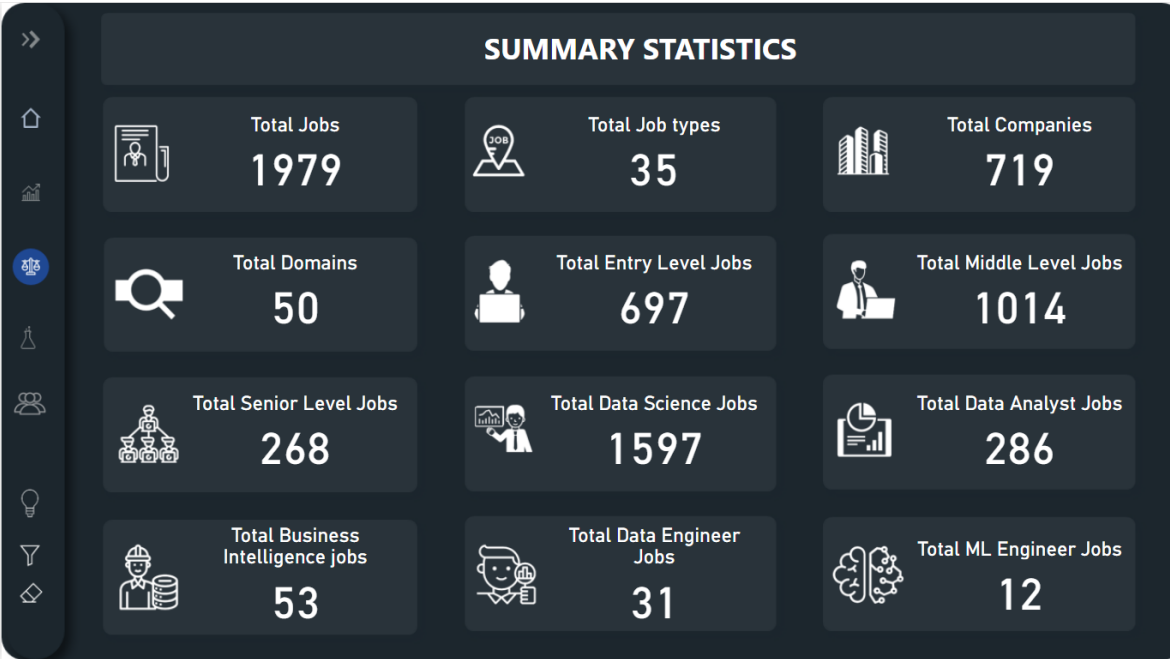


SUMMARY VISUAL PAGE



DASHBOARD PAGES VIEW

SUMMARY STATISTICS PAGE

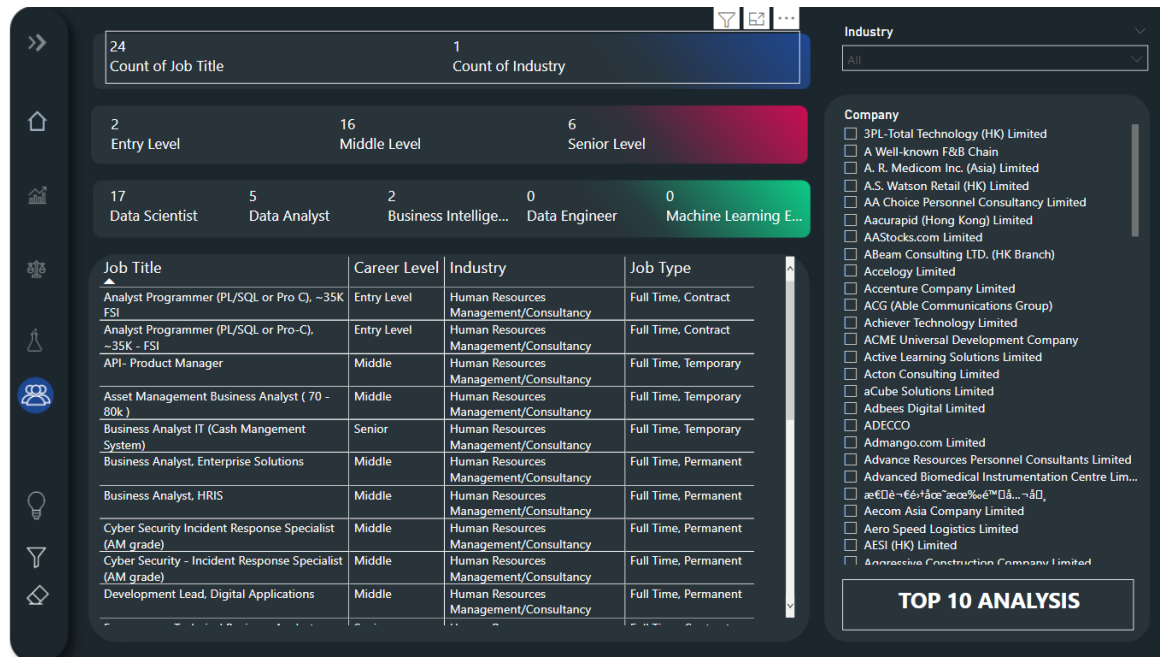


JOB SUMMARY PAGE

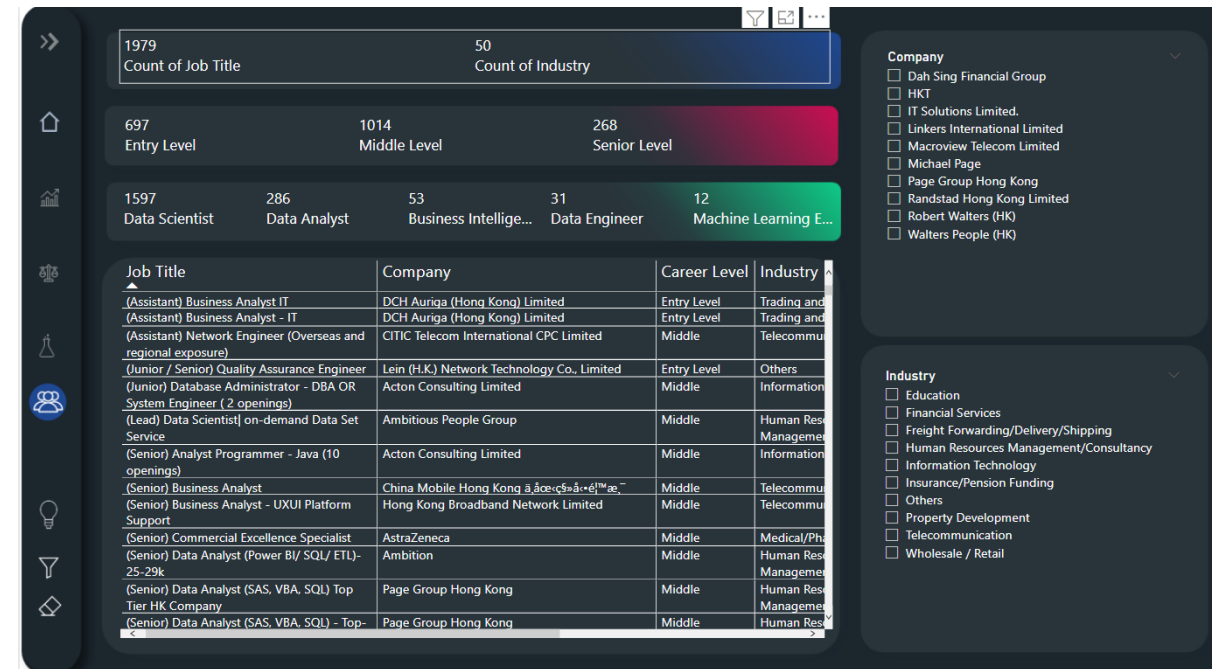


DASHBOARD PAGES VIEW

COMPANY LEVEL ANALYSIS PAGE



TOP 10 COMPANY LEVEL ANALYSIS PAGE





THANK YOU !

A very special thanks to Satyajit Sir for organizing this amazing contest.

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