



INNOMATICS

RESEARCH LABS

Project On

Exploratory Data Analysis on AMCAT Dataset

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AGENDA

1

Business Problem

Business Problem and
Use case domain
understanding

2

Objective

Objective of the
Project

3

Exploratory Data Analysis

Exploratory Data
Analysis and fetch out
the insights from the
dataset after
processing the data.

4

Key Business Question

Insights into trends
and our competitive
positioning.

5

Conclusions

Conclusion what we
got from the dataset.

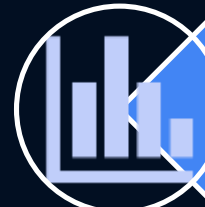
Business Problem Statement



The engineering industry faces the challenge of optimizing career paths for graduates, many of whom, despite having diverse cognitive, technical, and interpersonal skills, struggle in a competitive job market.



In response, we are conducting a comprehensive analysis of a dataset that encompasses employment outcomes, standardized scores from cognitive and technical assessments, personality evaluations, and demographic information.



Our mission is to extract actionable insights from this data to transform the landscape for engineering graduates, ultimately guiding them towards fulfilling unemployment successful careers.

Objective of The Project



- Exploration of Relationships:

Investigate the relationships between independent variables and the target and Dependent variable

- Pattern and Trend Identification:

Uncover any discernible patterns or trends present within the data, which may offer valuable insights into the underlying dynamics of employment outcomes.

- Research Question :

Times of India article dated Jan 18, 2019 states that “After doing your Computer Science Engineering if you take up jobs as a Programming Analyst, Software Engineer, Hardware Engineer and Associate Engineer you can earn up to 2.5-3 lakhs as a fresh graduate. Test this claim with the data given to you.

- And Is there a relationship between gender and specialization? (i.e. Does the preference of Specialization depend on the Gender?)

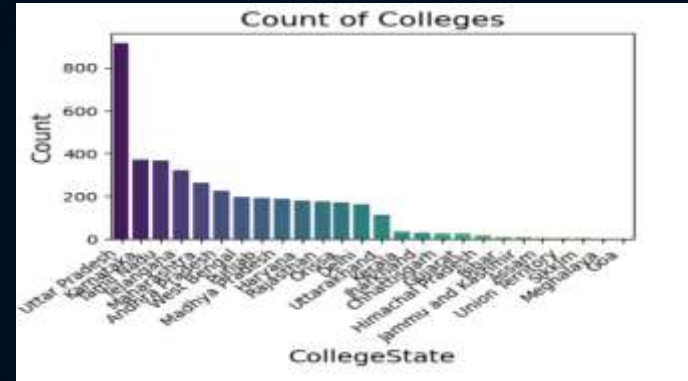
Work-Flow



Univariate Analysis

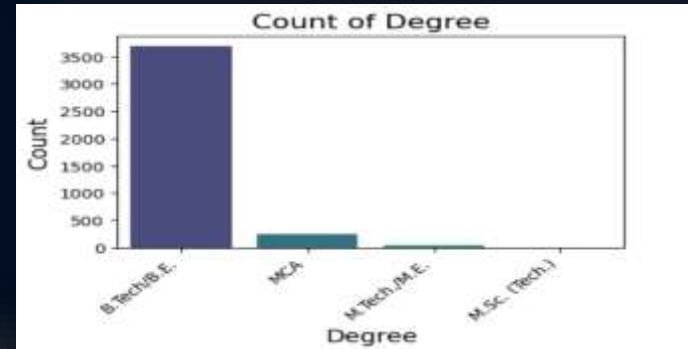
College State Insights-

- The top states with the most colleges in the dataset are Uttar Pradesh (UP), Karnataka, Tamil Nadu, Maharashtra, West Bengal, Punjab, Madhya Pradesh, Haryana, and Delhi.
- This shows that these states have a large number of educational institutions, helping produce a large number of skilled graduates for the workforce.



Degree Insights-

- The main degree for jobs in the dataset are B.Tech/BE and a little bit MCA.
- This means these Degrees are key centers for jobs, offering many opportunities across different industries.



Gender Distribution Insights-

- The dataset reveals that about 75% of the candidates are male, while around 25% are female. • This indicates a gender imbalance, with males being more represented than females.
- Understanding this distribution is important for analyzing gender diversity and promoting inclusivity in recruitment and workplace environments.



(10th percentage, 12th percentage, and CGPA) vs Salary

10th and 12th -

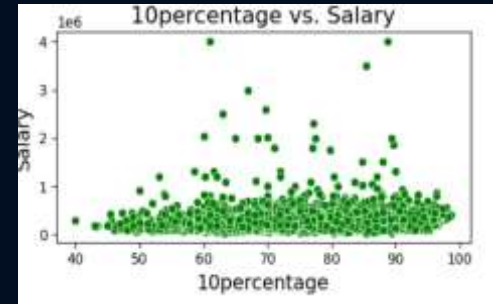
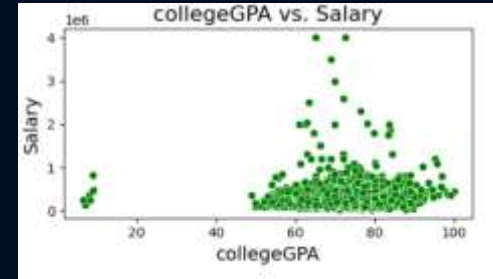
There is a significant positive correlation between 10th and 12th percentages and Salary, Higher academic performance, particularly in 10th and 12th grades, tends to correspond with higher Salary.

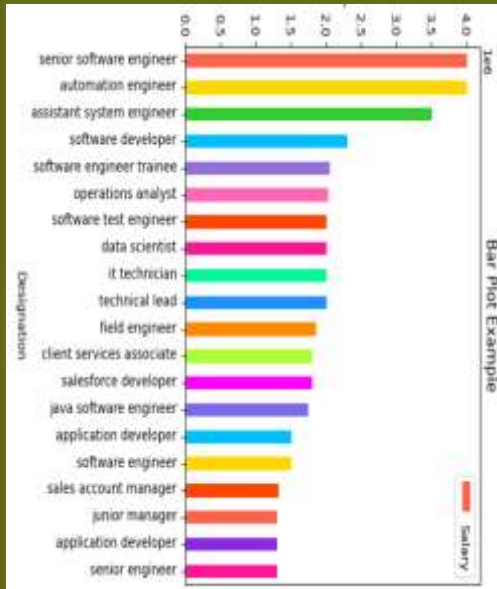
CGPA as a Determinant-

The analysis also reveals a significant correlation between CGPA and Salary, Candidates with a CGPA above 60% are more likely to secure jobs and negotiate higher Salaries compared to those with lower CGPA.

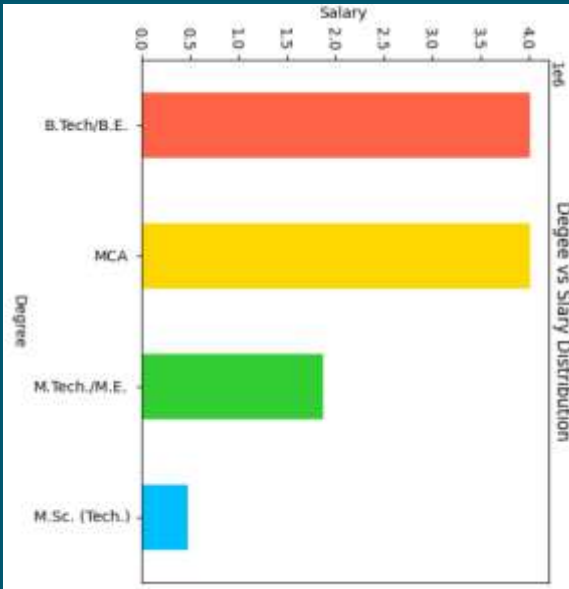
Consideration in Hiring Decisions-

Employers may prioritize academic performance, particularly CGPA and 10th/12th percentages, when making hiring decisions. Candidates with stronger academic backgrounds may be perceived as having higher potential value to the organization.

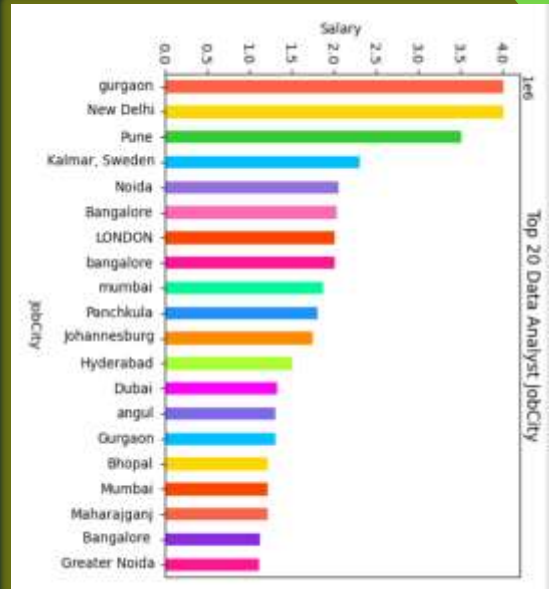




Top 20 jobs Designation
has more salary in IT
companies

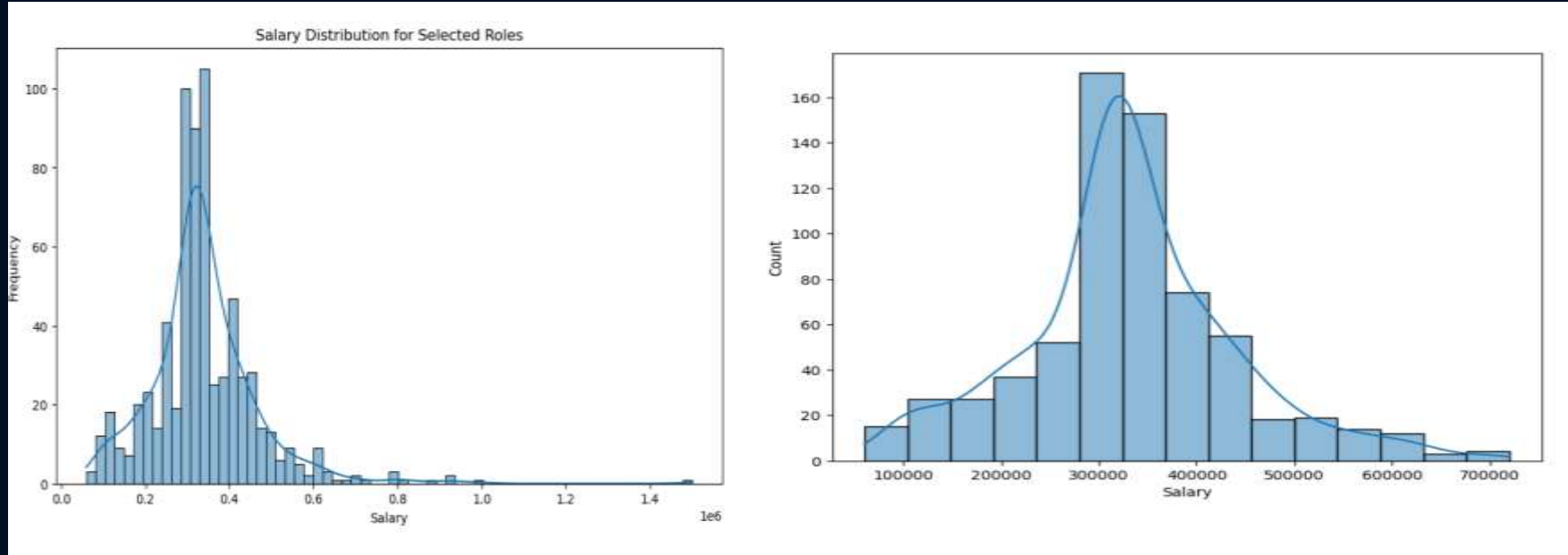


Degree vs Salary



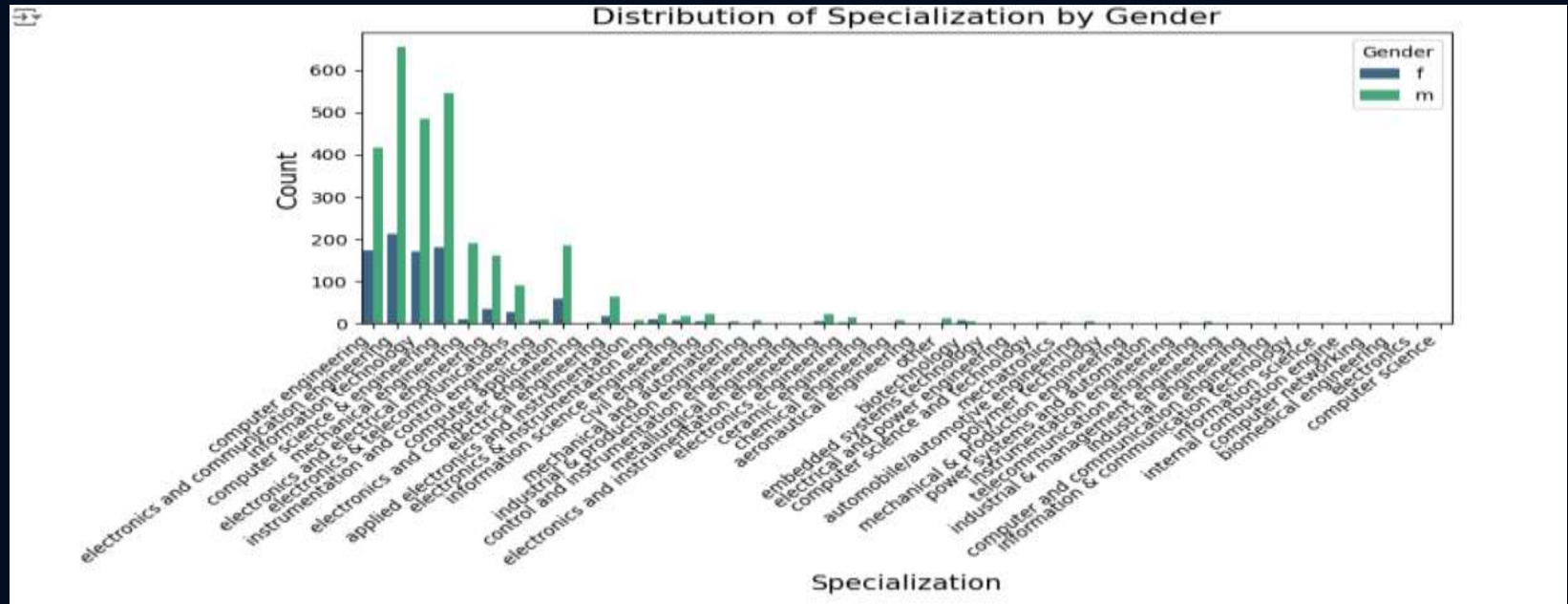
Top 20 Job City which pays
Higher Salary for Data
Analysis Jobs

Software Engineer, Hardware Engineer and Associate Engineer you can earn up to 2.5-3 lakhs as a fresh graduate. 5-3 lakhs as a fresh graduate. Test this claim with the data given to you.



From the above graphs we can claim that fresh graduates can earn up to 2.5-3 lakhs is not supported by the data.

Is there a relationship between gender and specialization? (i.e. Does the preference of Specialization depend on the Gender?)



From the above graph we can conclude that both gender and specialization are independent variables it means there is no relationship between these two.

Conclusion

Job City and College State Insights-

1.Top Job Cities-

Gurgaon, Noida, Pune, Bangalore, and Mumbai emerge as the leading job hubs.

2.Top College States-

Uttar Pradesh, Karnataka, Tamil Nadu, and Maharashtra dominate in terms of educational infrastructure. These locations indicate strong alignments between employment and academic opportunities.

Gender Distribution Insights-

1.Males account for around 70% of the dataset, indicating a gender disparity.

2.This gender distribution emphasizes the need for inclusive hiring practices and workplace diversity initiatives.

Academic Performance Insights-

Both 10th and 12th-grade percentages are concentrated between 65% and 90%, with a notable portion of students scoring above 65%.

College GPA is similarly clustered between 65 and 85, with only a small number of students achieving GPAs above 95.

Salary Expectations for Fresh Graduates-

The claim that fresh graduates can earn up to 2.5–3 lakhs is not substantiated by the data, as the analysis of salary-related variables suggests otherwise.

Key Employment Hubs-

1. Cities such as Gurgaon, Bangalore, and Pune are prominent destinations for high-paying roles in data analysis.
2. Emerging markets like Visakhapatnam and Coimbatore are showing growth in offering opportunities in these sectors.

Employment Insights-

High-paying roles like Data Scientist and Senior Developer are associated with lucrative salaries, particularly within IT firms.

CGPA as a Key Determinant-

A CGPA above 60% is linked to better job prospects and improved salary negotiation leverage.



THANK YOU!

The image features a hand in a dark suit holding a black pen, positioned on the right side. The background is a vibrant blue with a bokeh effect of colorful lights. A central white rectangular box contains the text 'THANK YOU!'. Surrounding this box is a dense network of white icons and charts, including bar graphs, line graphs, pie charts, and symbols for communication (phone, mail), people, and technology (laptop, target, smartphone). The overall composition suggests a professional or business context.