

Exploratory Data Analysis (EDA) on Startup Funding Dataset

Introduction

This document summarizes the exploratory data analysis conducted on the startup funding dataset, focusing on funding trends, industry performance, and key performance indicators (KPIs). The analysis aims to provide insights into investment patterns and identify leading sectors and regions.

Methodology

The analysis utilized Python libraries such as Pandas, NumPy, Seaborn, Matplotlib, and Plotly. The dataset was loaded, cleaned, and visualized to extract meaningful insights through the following steps:

- Data Loading: Loaded from Exported_Startup_Filelatest.csv.
- Data Cleaning: Handled missing values and converted data types.
- Visualizations: Created various visualizations to represent the data.

Key Visualizations and Insights

1. Total Funding Across Industries (Treemap):
 - Visualizes the top 15 industries by total funding.
 - Insights: Highlights dominant sectors and emerging industries (e.g., Biotechnology, Mobile, Software).
2. Funding Trends Over the Years (Bubble Chart):
 - Tracks funding growth over time by industry.
 - Insights: Identifies peak investment years and leading sectors.
3. Yearly Funding Trends (Line Chart):
 - Analyzes total funding per year.
 - Insights: Assesses funding stability and growth trends.
4. Top-Funded Startup Categories (Bar Graph):
 - Displays the top 10 categories by funding.
 - Insights: Identifies high-growth sectors attracting investment.
5. Funding Round Summary (Bar Chart):
 - Summarizes the number of startups in each funding round.
 - Insights: Highlights popular funding stages.
6. Geospatial Funding Distribution (Choropleth Map):
 - Visualizes funding by country.
 - Insights: Reveals global investment patterns and regional disparities.
7. Top Cities as Investment Hubs (Scatter Chart):
 - Identifies the top 10 cities by funding.
 - Insights: Highlights leading startup ecosystems.
8. Interactive Donut Chart of Top Cities:
 - Visualizes the top 10 cities, emphasizing the top 3.
 - Insights: Clearly identifies leading funding hubs.
9. Average Funding per Round (Heatmap):
 - Analyzes average funding across rounds.
 - Insights: Reveals funding trends and correlations.

Key Performance Indicators (KPIs)

- Total Funding Growth Rate: Tracks annual funding dynamics.
- Average Funding per Startup: Provides a benchmark for funding evaluation.
- Top 5 Investment Types: Identifies popular funding strategies.
- Country & City with Highest Funding: Reveals key investment hubs.
- Industry with Highest ROI: Highlights top industries by funding.

Conclusion

The EDA provided valuable insights into startup funding trends, highlighting key industries, regions, and investment patterns. The visualizations serve as essential tools for stakeholders to understand the startup ecosystem and make informed decisions.