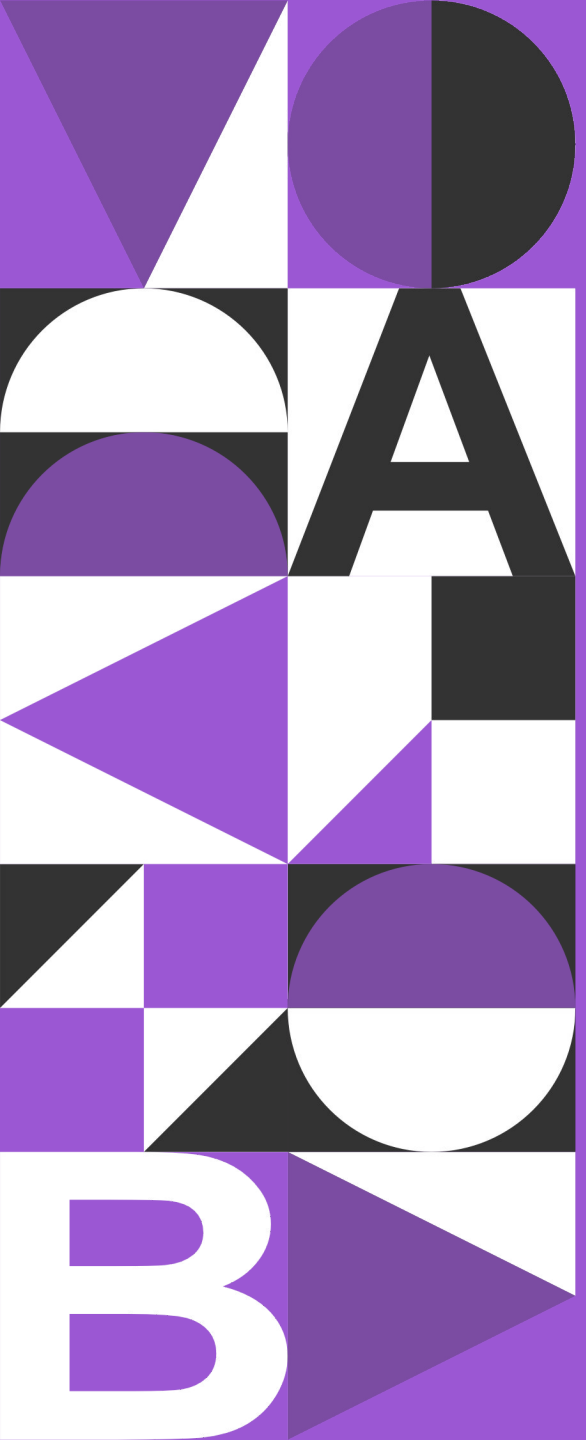

Infosys

Springboard 6.0 | Milestone 1

Skill Match Resume Matcher and Skill Recommender

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Introduction

- **Artificial Intelligence** – Brief context of the Artificial Intelligence - technology that allows computers and machines to perform tasks that typically require human intelligence, such as learning, reasoning, problem-solving, and decision-making

Applications of Artificial Intelligence

- **Virtual Assistants** – Siri, Alexa, Bixby
- **Navigation, Finance, Healthcare, etc.**

Machine Learning

- subset of **artificial intelligence** that allows systems to learn and improve from data without being explicitly programmed.

Applications – Image and Speech Recognition, Autonomous Vehicles, etc.

Libraries in Artificial Intelligence

- **NumPY** – The Foundation (Fast, Powerful)
- **Pandas** – The Workhorse (Data Structures and analysis tools)
- **MatplotLib** – The Canvas (Low Level, Customizable Plotting)
- **Seaborn** – The Artist (High Level, Statistical Visualization)

NumPY (Numerical Python)

- **NumPY** is the fundamental library for numerical computing in Python. It is the “engine” that Pandas, Matplotlib, and Seaborn all run on.
- Uses – Arithmetic Operations, Searching, Sorting and Counting, Broadcasting, Linear Algebra, Stacking, etc.
- NumPY Code

Pandas (Data Analysis Library)

- **Pandas** is the most popular library for data manipulation and analysis.
- It is the primary tool for loading, cleaning, and analyzing tabular data.
- Pandas Code

MatplotLib (The Canvas)

- **MatplotLib** is the original and most fundamental plotting library for Python.
- It’s the foundation for all other visualization libraries (including SeaBorn)
- MatplotLib Code

SeaBorn (The Artist)

- **SeaBorn** is a high level visualization library built on top of Matplotlib.
- The fastest way to go from a pandas data frame to a beautiful, informative, statistical plot.
- SeaBorn Code

Putting It All Together: The Workflow

- We use Pandas to load raw data into a Data Frame.
- We clean and analyze the data using Pandas operations.
- We use Seaborn to quickly create a beautiful statistical plot. It draws that plot onto a "canvas" that is managed by Matplotlib.

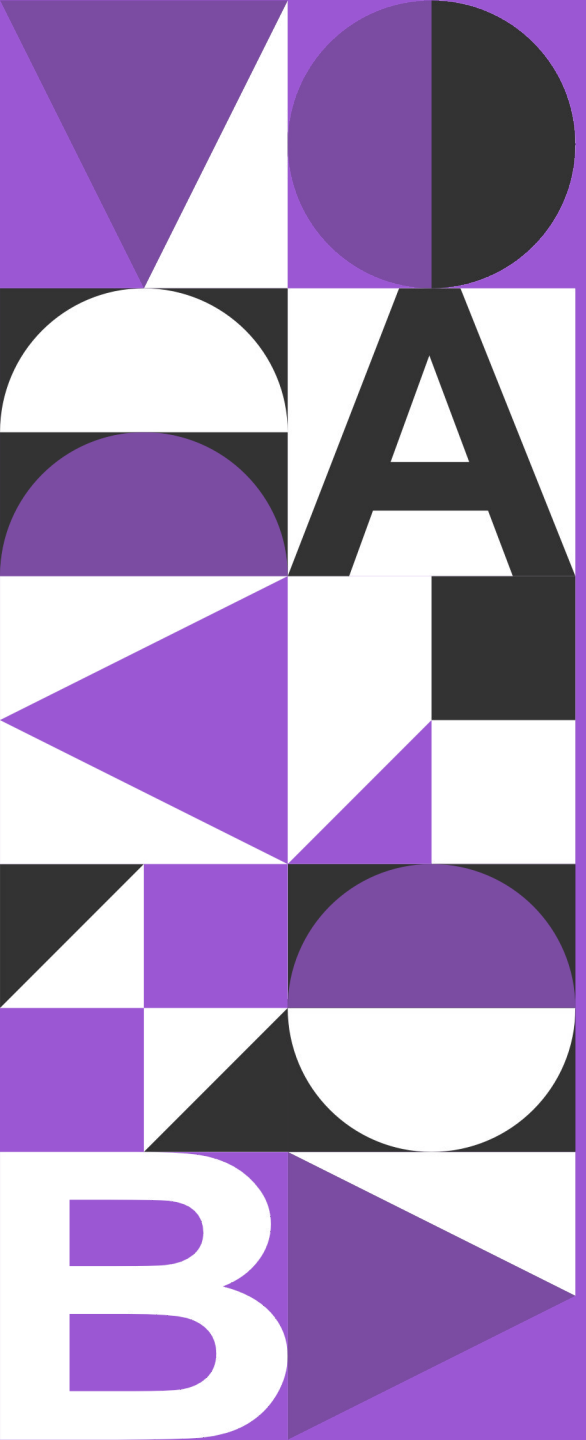
Discussion

- **Limitations & What's Next?** – These libraries are primarily for static plots.For interactive, web-based visualizations, one might look at libraries like Plotly or Bokeh.

- For machine learning, this stack is the prerequisite for libraries like **Scikit-learn**.

Conclusion & References

- Official Documentation of Numpy, etc.
- Key Books - McKinney, W. (2017). Python for Data Analysis (2nd ed.). O'Reilly Media, VanderPlas, J. (2016). Python Data Science Handbook. O'Reilly Media.



Thank you

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