1. **Application Of Data Analytics**

In today’s world, data is produced at unprecedented rates. While the capacity to collect and store new data rapidly grows, the ability to analyze these data volumes increases at much lower rates. This gap leads to new challenges in the analysis process, since analysts, decision makers, engineers, or emergency response teams depend on information hidden in the data (Keim et al., 2008). The emerging field of analytics focuses on developing actionable insights through problem definition and the application of statistical models and analysis against existing and/or simulated future data.

Although, there are many applications of data analytics. I am going to focus on its two important applications which is to predict future scenarios and improve decision-making.

* 1. **Predict future trends**

Organizations can predict future trends and innovations with data analytics. Using predictive analysis tools, organizations can develop future-focused products and services and stay at the top of their market. Using good marketing, these organizations can create demand for these offerings and capture a larger market share. They can even obtain patents for futuristic inventions to maintain an advantage over competitors and maximize profits.

* 1. **Improve decision-making**

Organizations can use data analytics to prevent financial losses. Predictive analysis can detect future actions of customers if a change is made, and prescriptive analysis would suggest how to react to these changes to maximize profit. For instance, let us say a company wishes to increase the prices of its products. They can build a model to determine whether this change would affect customer demand. Results from this model can be confirmed by testing. This would prevent terrible financial decisions.

1. **Role In Analytics That I Would Like to Pursue and Why?**

## I would like to pursue **Data Scientist** role in my professional career**.** Because as data scientist as I would like to seek out most challenging problems to tackle in today’s business and create technology-driven solutions that will pave the way for inclusive growth and innovation using data analysis and data processing. For instance, I will perform predictive analysis and use tools/techniques & run through an “unstructured/disorganized” data to offer actionable insights and identify trends and patterns that can help the companies in making better decisions. This will allow me to work on of my focused goal, which will be to *“Integrate Big-Data, Machine learning, and Analytics to enable better decision-making in both business and public policy and leverage it to provide more accessible and affordable services to consumers.*"

1. **Three Most Important Analytical Skills I Would Like to Develop in My Career.**

Below are three most important analytical skills I would like to develop in my career.

### Critical Thinking - Critical thinkers can look at a problem or scenario and formulate an understanding of how and why the problem exists (Gil, 2016). The ability to understand the full scope of the problem is the first important step towards developing effective solutions.

### Tenacity - Not all problems are straightforward, especially in the world of data science. Many challenges have multiple layers, each with its complex nature. Sometimes, this complexity and lack of a simple linear track can cause people to give up. Strong analytical skills mean seeing beyond one issue at a time to develop a more cohesive view of a problem's complexity.

### Attention to Detail - When handling large sets of data, it’s easy to overlook details that might be essential to a project's outcome. Successful data scientists analyze mountains of information and use their ability to pay attention to detail to identify and use the most important data sets.

1. **Python and SQL, Their Pros and Cons Compared to R**

* **Python**

Python is a computer programming language often used to build websites and software, automate tasks, and conduct data analysis. Python is a general-purpose language, meaning it can be used to create a variety of different programs and isn’t specialized for any specific problems.

1. **Pros**

* ﻿﻿Best for new coders to pick up, while it can be time consuming to develop expertise in R
* ﻿﻿Best for machine learning
* ﻿﻿Larger global user base and it’s easier to collab with other programmers in the team
* Best to deploy algorithms
* Easier to find a novel way of solving a problem
* ﻿﻿Used for scripting websites or gather apps
* ﻿﻿Gradual learning curve

1. **Cons**

* ﻿﻿Less appealing data visualizations when compared to R.
* ﻿﻿Less specialized packages for statistical analysis and tools compared to R.
* Harder to know which IDE to use and which libraries to pick.
* **SQL**

SQL (Structured Query Language) is a programming language designed for managing data in a relational database. It's been around since the 1970s and is the most common method of accessing data in databases today. SQL has a variety of functions that allow its users to read, manipulate, and change data. Though SQL is commonly used by engineers in software development, it's also popular for data analysis.

* 1. **Pros**
* SQL is great for data that needs to be transformed and made ready for analysis and presentation.
* Best for data collection and pre-processing. it is used primarily to get data into and out of relational databases.
* Strong Reporting Tools
* Well-Defined Community
* Efficient For Non-Changing Data
  1. **Cons**
* Difficult To Scale
* Difficulty With High Volume
* Requires Specialized Personnel
* Problematic In Rapid Dev Environments

1. **References**
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3. Gil, Y. (2016, March). Teaching big data analytics skills with intelligent workflow systems. In *Proceedings of the AAAI Conference on Artificial Intelligence* (Vol. 30, No. 1).