

DEVELOP A DATA-DRIVEN MINDSET

BY JEFFRY L. TROLL

Do you want to lose weight? Do you want to earn more money? Do you want to find the best place to buy gas? Do you want to increase your odds of landing your dream job? Believe it or not, you could finally accomplish your new year's resolutions through data analysis. Data is a powerful source of insights and solutions¹.

Let's take a quick look at time management, one of the most common issues among college students². Do you know how much time you spend on your phone? What about the hours do you sleep? Or do you know how much time do you spend doing homework? A week consists of 168 hours. Assuming that you will sleep 8 hours per day, you will have 112 hours of available time. If you are taking 12 credits, you will spend 36 hours on classes and out-of-class student work each week at least³. So, you have 76 hours remaining to work, cook, attend to your family, exercise, or do whatever you want.

The previous exercise is an example of a data-driven person habit. Data analysis brings the mindset and skills to acquire critical thinking, allowing you to make intentional decisions.

Let's take a tour of the journey to becoming a data-driven person. The following sections will explain the path. It will start with explaining the concept of data, then understanding how that information is processed, learning how to use it to find insights with data, and finally acting upon the analysis done before.

- What's data?
- How much data is required?
- How to access data's power?
- Data analysis brings results.

What is data?

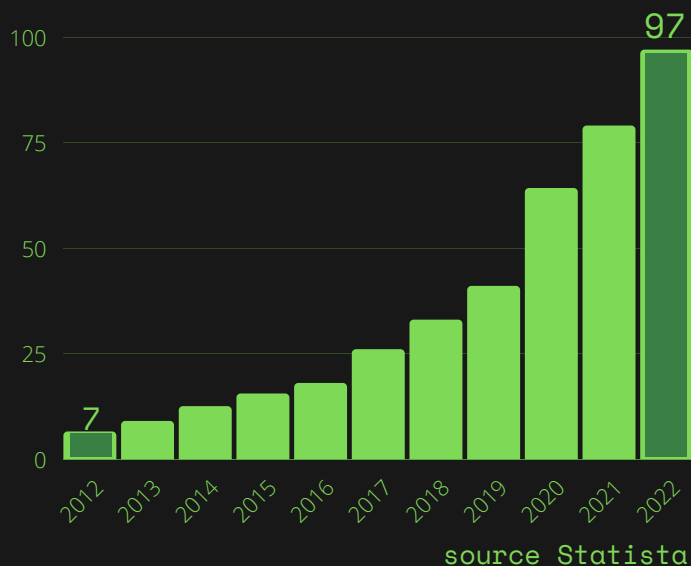
Understanding data is the first step in data analysis. Data is information, such as names, locations, dates, or numbers. Data is classified and divided into personal, engagement, behavioral, and attitudinal data⁴. Depending on the goal, scope, and purpose, collecting a specific data type is more beneficial than another. For example, for people who want to improve their pace in running, knowing how many miles they run per minute is more important and helpful than the price of the running shoes.

On the other hand, for people who want to start a diet, probably knowing their body type and metabolism is essential to know which diet to pick. Think about what you want to improve in your life, and figure out what kind of information do you need to track or measure.

How much data is required?

Aim your data towards possible solutions, don't worry about quantity. Data is abundant in modern society. Figure 1 below shows the total amount of data created and used globally in the past decade –reaching 97.0 zettabytes in 2022.

Figure 1. data will always increase because the more you have, the more accurate and detailed the solutions.



A byte is the most basic unit of information used to describe the storage capacity of electronic devices. A zettabyte is equivalent to 1,000,000,000,000,000,000 bytes⁵. For example, only the entire catalog of Netflix⁶ was about 0.00001 zettabytes in 2020. This massive quantity of information is mostly processed by computers –artificial intelligence and machine learning. You don't need that kind of amount of information. Keep it simple but reliable.

Going back to the example of improving pace in running, tracking how many miles per second will not bring a better understanding than tracking them per minute –unless you're an Olympic athlete. Determining which data is valid is critical in data analysis. Ponder about what questions you can answer by using data. Useful data is easier to recognize when you know the concept of cleaned data.

How to access data's power?

Cleaning information is one of the most critical and demanding steps in data analysis. Cleaning data implies that dirty data has to exist in the first place. That is known as raw data, which is just stored data. Indeed, raw data doesn't say anything, you have to clean it by organizing and determining the trends. Similarly, words don't equal an essay, even with the potential to become clauses and phrases. Every dataset has the potential to tell a story. For example, I have a friend who loves chess, and he recently went to a tournament. He told me that he did some research before setting the training routine:

1. He figured out the level of his potential opponents, or elo, which the rating system measures and classifies chess players.
2. He found a bunch of data and resources to counter that specific elo.
3. He gathered sets and lists with moves to practice.

He filtered and organized the data, aiming to particular needs and requirements, maximizing their efforts over time. Additionally, Symon He and Travis Chow, data analysis instructors, teach that the value of data depends on the ability to process, manipulate,⁷ and translate that data into insights.

Clean data allows data-driven people to see insights and potential solutions. However, cleaning information demands time. Figure 2 below illustrates the result of a survey of 80 data scientists who answered what they do most of their time.

Figure 2. cleaning and organizing data requires most of the time in data analysis process.



source Forbes

This graph demonstrates that the primary skill of data analytics is critical thinking. Understanding datasets is not an easy task, even be demanding and frustrating, but data-driven people want accurate results and answers. Be willing to spend that time to gather accurate data so you can find those hidden stories and improve your lives.

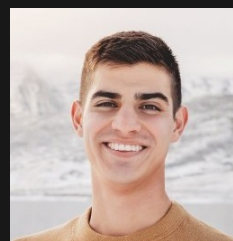
Data Analysis brings results

Since working with data, I have seen the world differently. My decision-making process changed positively because of the critical thinking that I was developing. I began to look at statistics as a useful source instead of just a bunch of fun facts. For example, before applying to BYU, I knew that the 70% acceptance rate didn't apply to me because of my international status; however, I tried to increase my chances by improving my TOEFL score. The pattern is simple: collect data, analyze, plan, and act.

I know that this mindset will help other people too. My sister-in-law applied this method to achieve a personal goal. She decided to start counting calories to see the impact of knowing that. First, she needed to find a reliable and easy way to know how many calories is her food. Asking friends at the gym, spending some time on the internet, and looking at the app store helped her find the solution. In that process, she had to determine whether advice, article and review contributed to her goal and which one to avoid.

Once she found the app, she started to track her calorie intake. Thanks to the daily work of plugging every single item that she would eat, she noticed that she was eating more than needed. Then, she started a plan according to the information she collected. She told me it was easier to identify which items to reduce or avoid because she became aware that sizes and proportions don't match the calories value.

Weeks later, she is eating healthier, allowing her to feel ready for Hawaii this summer. I bet that it is annoying to pull out your phone, open the app, and record everything you eat every time that you eat. Therefore, if you want an improvement in your life, data analysis could bring those new insights into your life. Allow data analysis to improve your life and become a data-driven person.



Jeffrey L. Troll

I'm a Chilean data analyst, runner, and international student. I attended Ensign College, getting my associate's degree and a certificate in business analytics in 2021. I worked at Ensign College as a data analyst in the Institutional Effectiveness

& Assessment department, developing and creating solutions and insights through dashboards and reports to the heads of the school. After that, I transferred to BYU, pursuing my bachelor's in statistics with an emphasis in data science. I'm currently working at Career Services as a data analyst.

Endnotes

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