# Understanding the Difference Between Statistics and Machine Learning

Bit unconventional but relatable

# Understanding the Difference Between Statistics and Machine Learning

- **Statistics**: Draft the model for the problem and ask for the data.
- **Machine Learning**: You have data, so provide the solution.

  In **statistics**, the approach is to formulate a problem first and then gather the necessary data to solve it.

  On the other hand, the **machine learning** approach starts with the data and asks, "What can this data tell us?“
- This fundamental difference can lead to challenges, especially in job searches for data scientists.

- For example, during interviews, statisticians might struggle when asked, "**Here is my data**. **What can you tell me**?"

- A typical response might be, "**What do you want to know**?“
- Which often frustrates business professionals who expect insights without specific queries.
- This cycle of unclear expectations can leave both parties dissatisfied.
- The key difference lies in the approach:
  - In **machine learning**, data is abundant, but **asking the right question is crucial** and valued.
- In **statistics**, questions are straightforward, but **data collection is costly and significant.**
- **Both fields have their unique relevance and are essential in their own ways.**