

# **Practical Data Science: Wrangling Data and Answering Questions**

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Nick Eubank

# What is Data Science?

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2. What (**empirically**) is Data Science?

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- The tool you use should be dictated by the question you seek to answer



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⇒ Huge proliferation and increase in sophistication of computational methods

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⇒ Development of new tools occurred *within* each silo.

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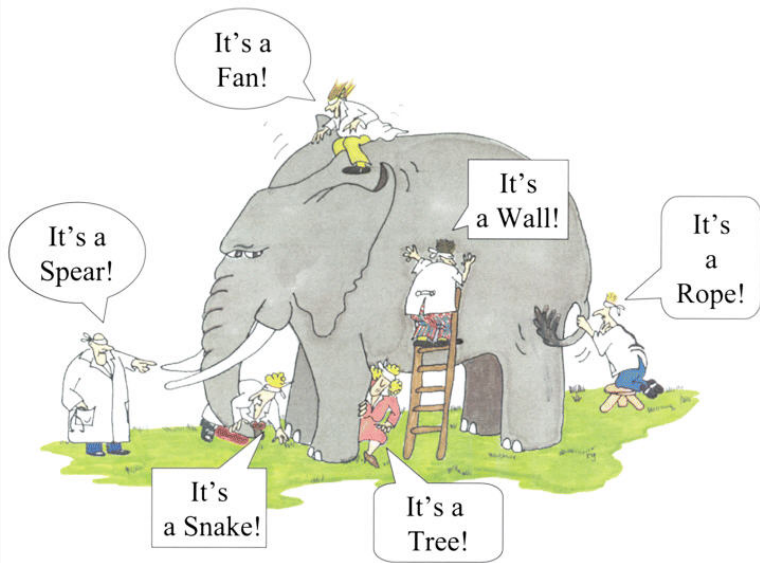
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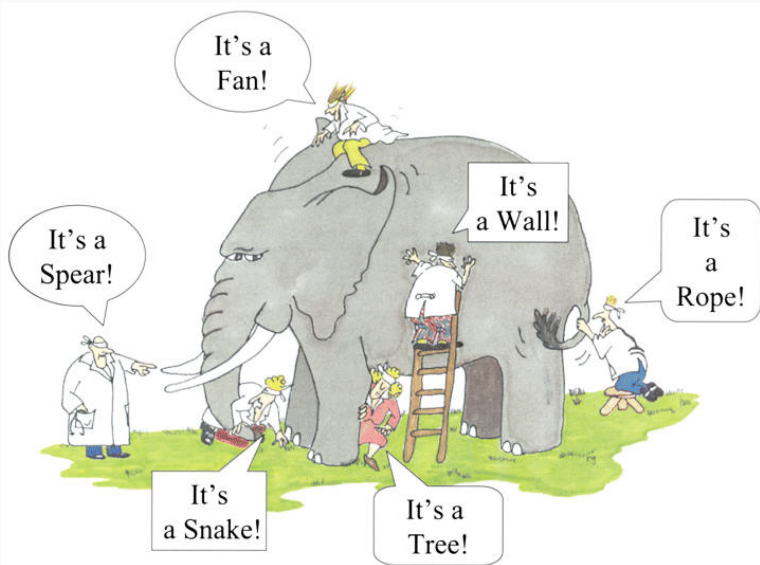
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- Every silo has its own vocabulary.
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  - CS likes to classify things and make predictions, don't care how model works
  - Social scientists like to make causal statements, don't care about predictive power







⇒ This is where we are *now*.

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→ Recognize the elephant

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- Important not just technically, but also when it comes to advice.
  - Recognize that your professors' conception of "data science" *may not match yours.*
  - Also just good life advice: scientists are *very unscientific* when it comes to career advice!

# Areas of Data Science

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**Data Analysis DS**

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## Data Analysis DS

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Nearly all data scientists will use some of both sets of skills.  
In this class, we will be focused on the **Data Analysis** flavor of Data Science.

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- *Data Science* Python

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- *Data Science* Python
  - numpy, pandas, scikit-learn, statsmodels, dask

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All through hands-on experience.

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⇒ Emphasis on generalizable data science skills

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- Know how to approach organizing a full project.

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- Developing methods of measuring Gerrymandering in the US.
- Testing theories about how social networks shape political behavior using cell-phone meta-data to map social networks of entire countries (Zambia and Venezuela).
- Studying whether political elites in the US South turned to using incarceration to prevent black voters from exercising political influence after the Voting Rights Act removed their ability to use Jim Crow restrictions.

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*If* this sounds like your “flavor” of data science, I'm happy to talk about career options in this domain.

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[www.practicaldatascience.org](http://www.practicaldatascience.org)