Human Contexts and Ethics in Data 100

Lesson 1:

Data Science Life Cycle and Twitter/Trump Scenario

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Human Contexts and Ethics of Data in the news

The New York Times

Mark Zuckerberg Testifies on Facebook Before Skeptical Lawmakers

[The New York Times](#), April 2018

NITASHA TIKU BUSINESS 11.01.18 06:14 PM

GOOGLE WALKOUT IS JUST THE LATEST SIGN OF TECH WORKER UNREST

[Wired](#), November 2018

CAMPUS   TUESDAY, SEPTEMBER 24, 2019

Under pressure, Palantir cancels UC Berkeley information session

SAKURA CANNESTRA/STAFF

[Daily Californian](#), September 2019

Human Contexts and Ethics Toolkit in Data 100

- Classification
- Identity
- Representation
- Agency
- Expertise
- Power
- Context
- Sociotechnical imaginaries

HCE Toolkit for Data 100 - Handout

Datasets you're learning with & techniques you're learning

- Bike sharing
- Trump's Tweets
- Housing prices
- Restaurant scores
- Spam
- Taxi rides in Manhattan
- Iris plants

Cleaning data, feature engineering, linear and logistic regression, data visualization

Scenario: Twitter "Trust & Safety"

The case of the president's Twitter account has sparked a lot of debate.

You're a data scientist on Twitter's "Trust and Safety" team. The goal of this team is to promote "socially beneficial" interactions on Twitter in accordance with Twitter's policies and laws of countries around the world (e.g. free speech law).

You're tasked with analyzing whether the existing policies defining and enforcing acceptable speech are what they should be or whether they should be changed.

Use the data science skills that you've learned in Data 100 to do analysis on the Tweets in order to support your decision.
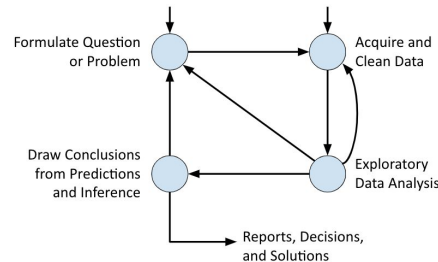
How do you think through the Human Contexts and Ethics of this project?

How to think about the Human Contexts and Ethics in your work as a data scientist

Data science task + Data Science Lifecycle + HCE Tools

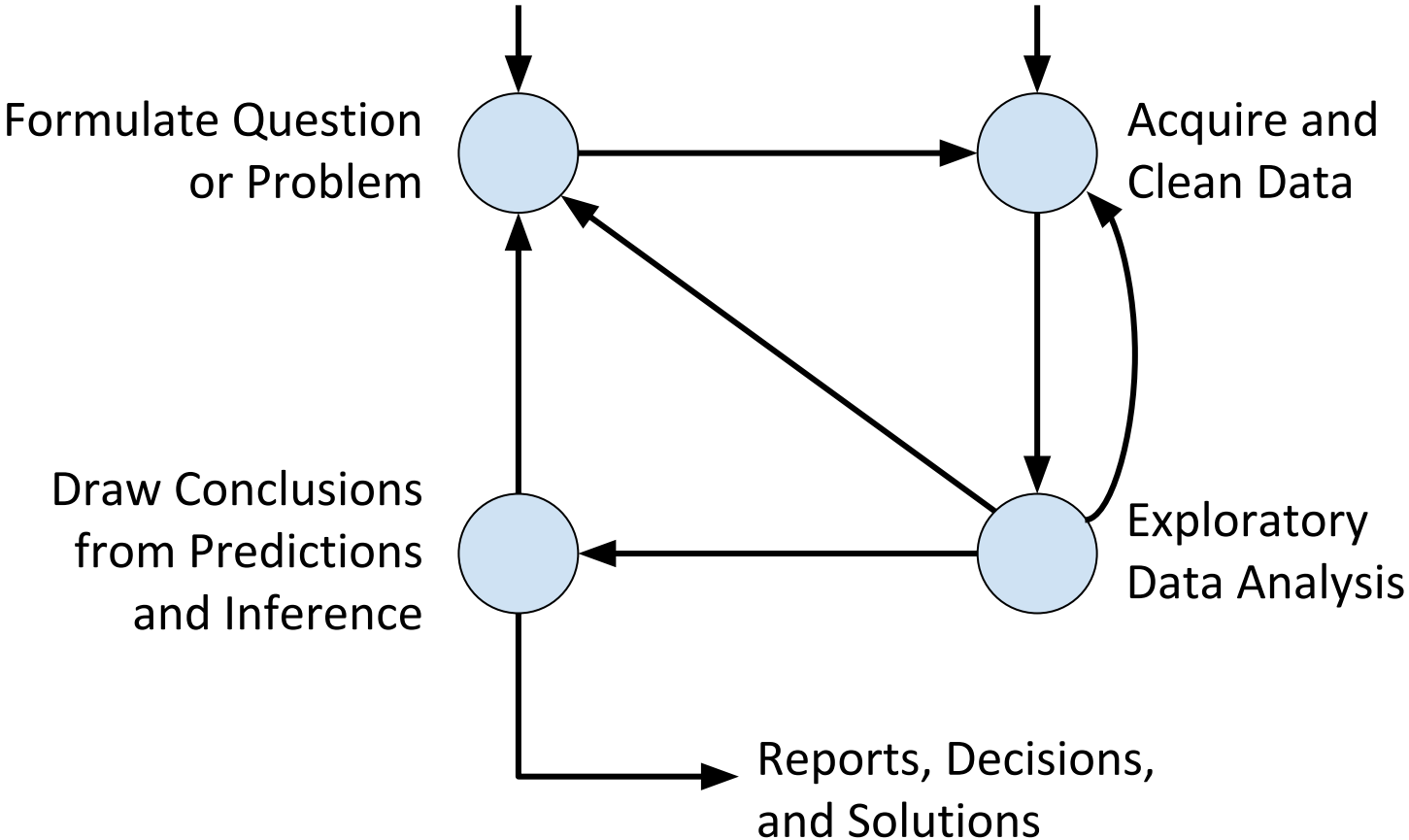
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Formulate Question or Problem

Acquire and Clean Data

Draw Conclusions from Predictions and Inference

Exploratory Data Analysis

Reports, Decisions, and Solutions

+

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# Data Science Lifecycle

1. Question / Problem Formulation

Why are you, as a data scientist, a relevant **expert** on this question? What do you bring to the table? Who else might have the relevant knowledge to help with this problem?

What are the broader **contexts** and stakes of the task? How does it negotiate existing **power** structures?

What do people -- whoever designed this position of a data scientist on the Trust and Safety team -- believe that data analysis can achieve? What **social** values do they **imagine** this **technology** can support?

- What do we want to know?
- What problems are we trying to solve?
- What are the hypotheses we want to test?
- What are our metrics for success? How is success defined?

Formulate Question or Problem
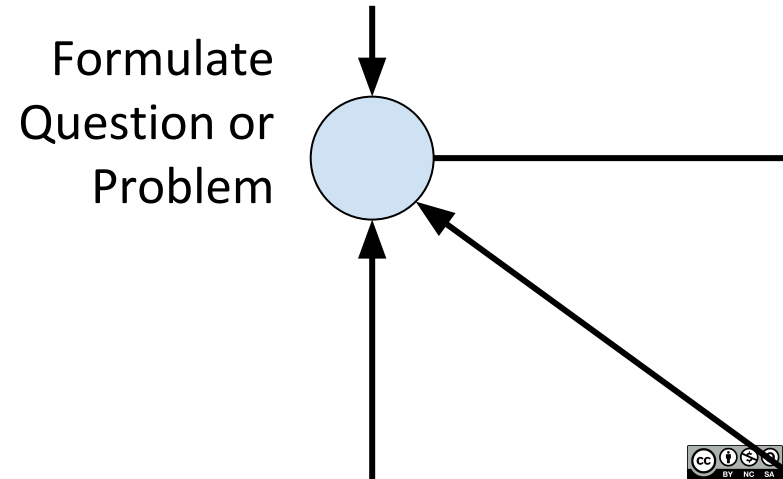
2. Data Acquisition and Cleaning

- What data do we have and what data do we need?
- How will we collect more data?
- How do we organize the data for analysis?

'full_text': 'Just spoke with the Crown Prince of Saudi Arabia who totally '
            'denied any knowledge of what took place in their Turkish '
            'Consulate. He was with Secretary of State Mike Pompeo...',

'location': 'Washington, DC',
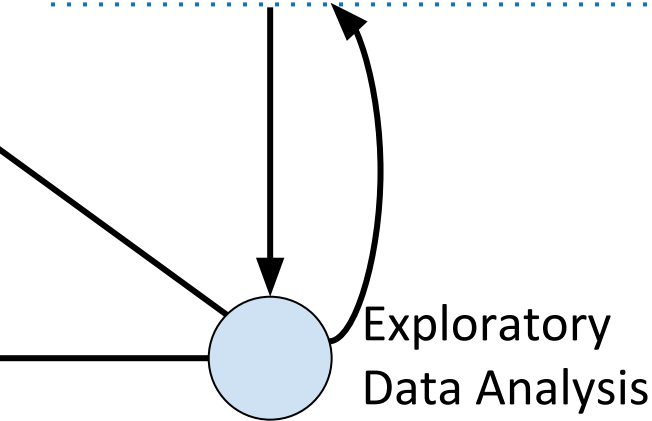'name': 'Donald J. Trump',

Acquire and Clean Data
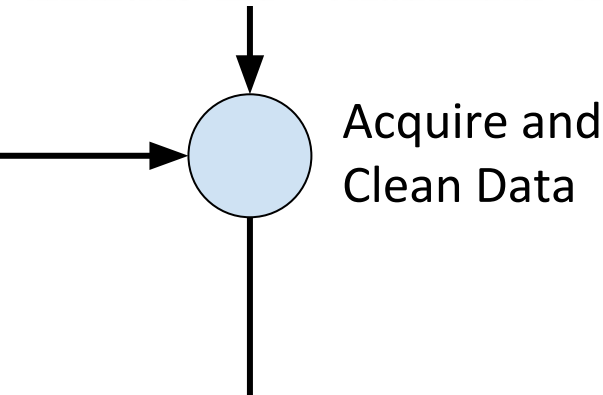
What is the **context** in which this data was collected?

What is **represented** in the data? Are individual people **represented**? How (i.e. with what features)?

What kinds of **identities** are captured? Who or what is excluded? What else do we need to know?

3. Exploratory Data Analysis and Visualization

Exploratory
Data Analysis

- Do we already have relevant data?
- What are the biases, anomalies, or other issues with our data?
- How do we transform the data to enable effective analysis?

What kind of **classification** system is used in the data set? How does data analysis revise the classification system?
    What are the consequences of labeling speech as "healthy" or "toxic"?

What argument does your visualization make? How else could the data be **represented**?
What different conclusions might be drawn by different visualizations?

4. Predictions and Inference

What story are you telling with the data? Why does it matter? What reservations do you have?

Who is listening? What will they do with your recommendation? What kind of **power** and **agency** do they have? What are the consequences of following the recommendation?

How does your analysis fit in with the broader problem that you're trying to solve?

Draw Conclusions from Predictions and Inference

Reports, Decisions, and Solutions
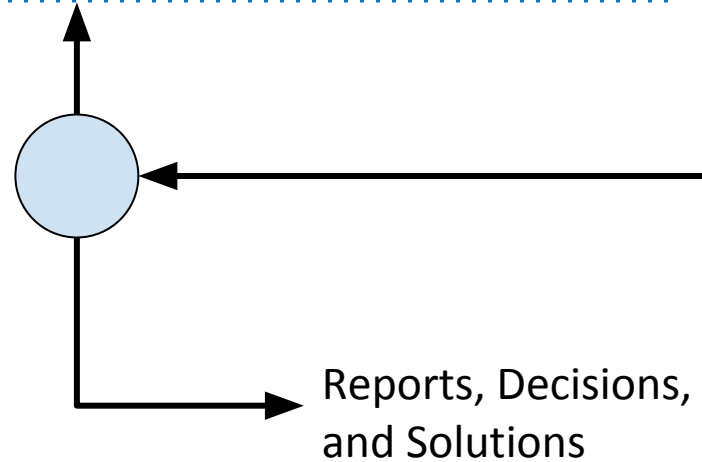
- Does it answer our questions or accurately solve the problem?
- How robust are our conclusions and can we trust the predictions?
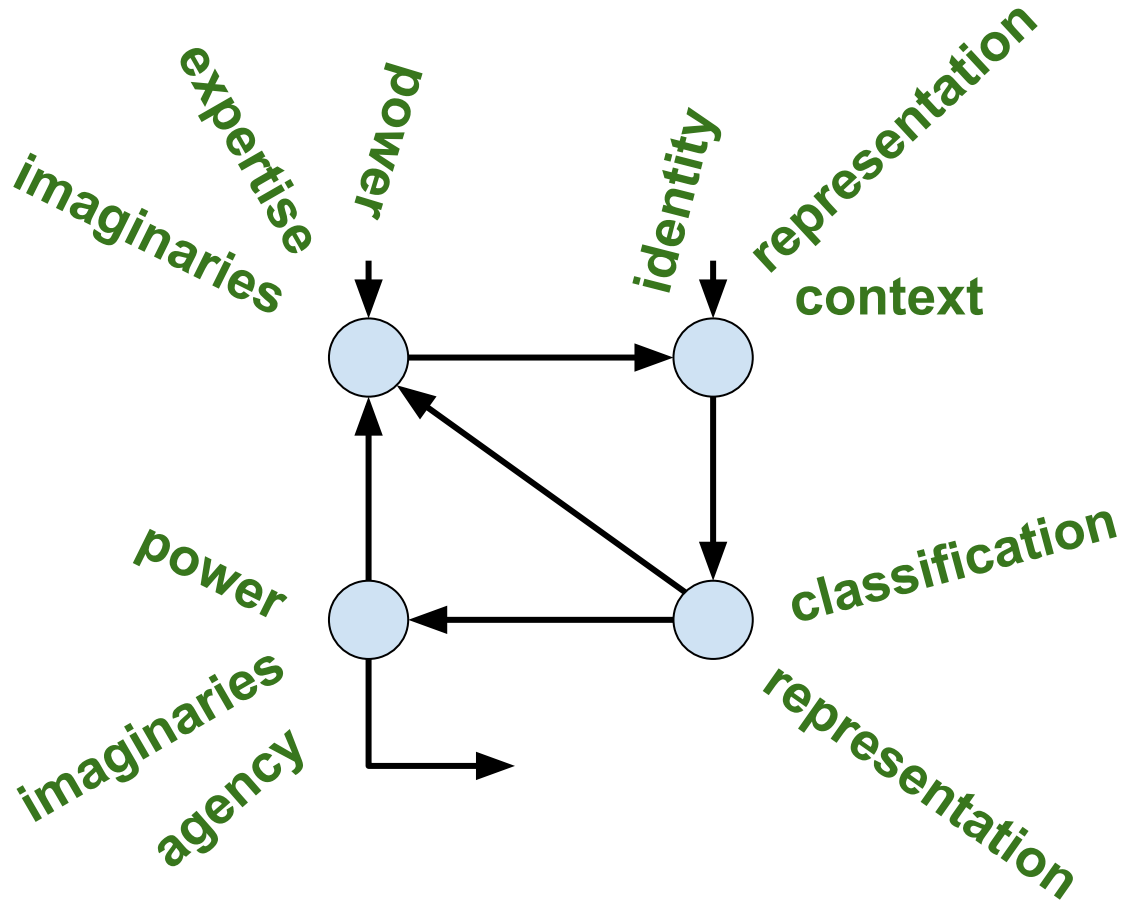
Data science helps make our world

Every step of the way, there are choices that help to shape the world we live in.

Use the HCE Toolkit to unpack how human power structures and value choices get built into technical work to shape our world.

Then, ask about ethics: "What world do we want to live in, together?"

...and aim to bring it about with your expertise as a data scientist.