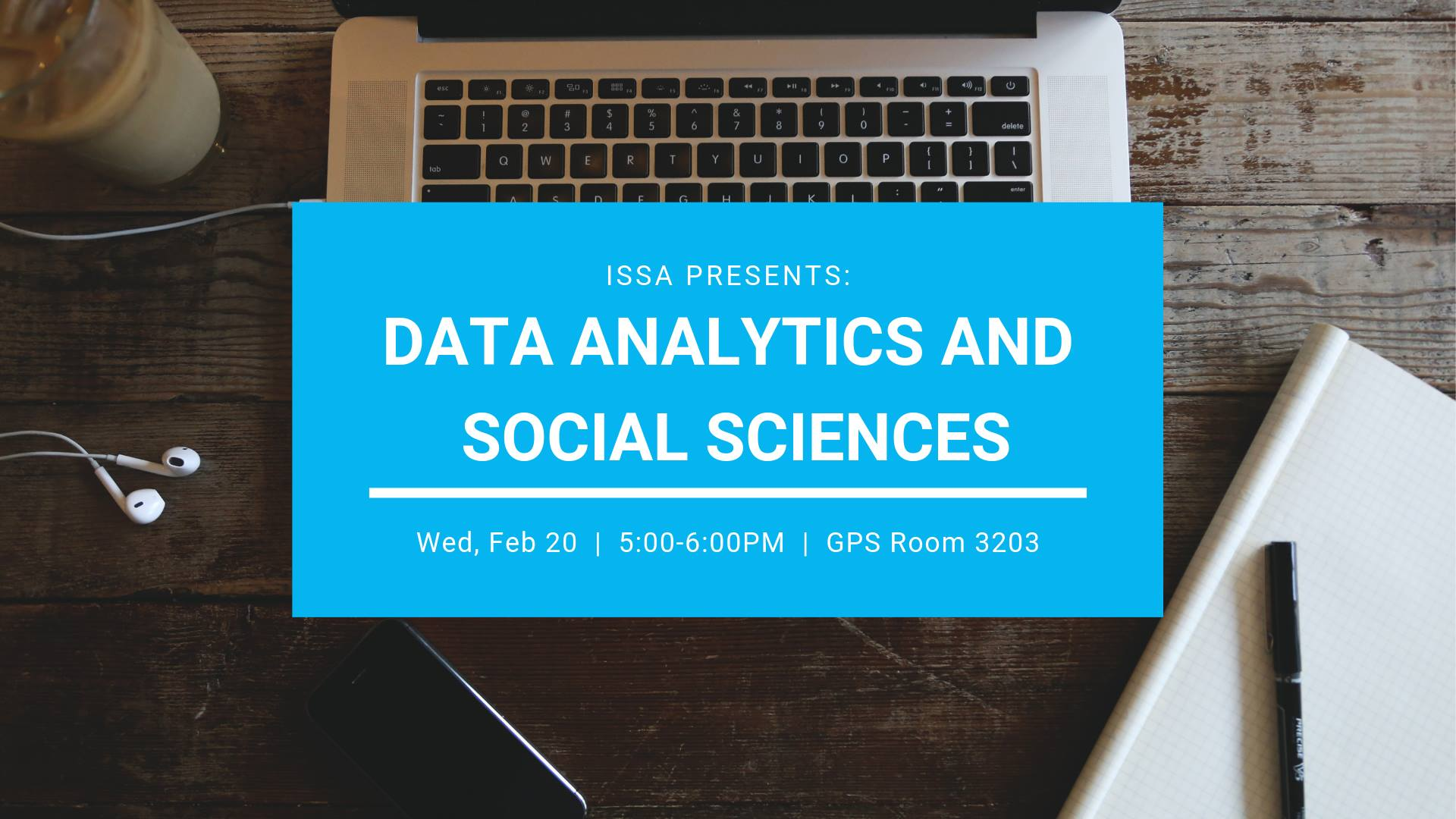
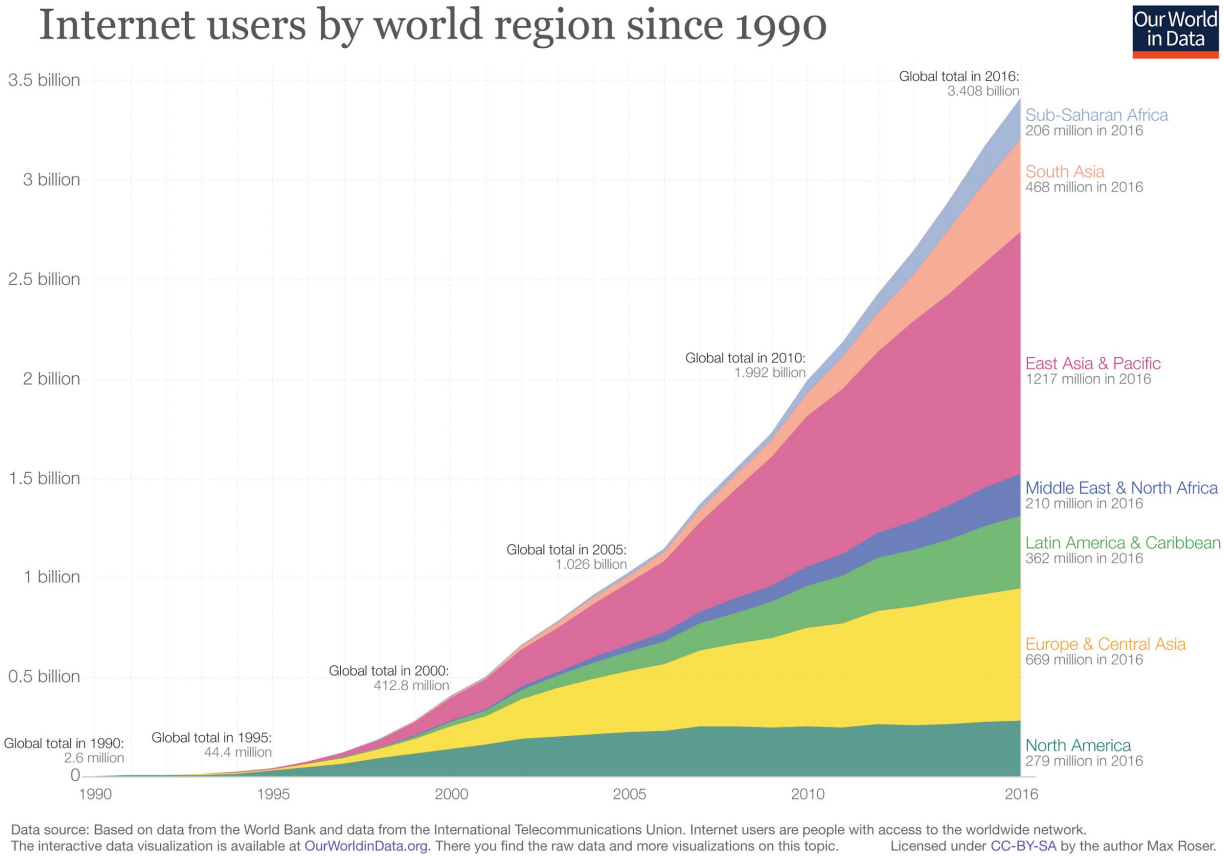

ISSA PRESENTS:
DATA ANALYTICS AND SOCIAL SCIENCES
Wed, Feb 20 | 5:00-6:00PM | GPS Room 3203

# The Rise of Data in the Online Age



# Types of Data

1. We have Numerical and Structured data
    a. GDP per Capita
    b. Population
    c. Poverty Rates
2. We also have Unstructured Data
    a. Sound Waves
    b. Satellite Images
    c. Facebook and Twitter Posts
3. Data Websites

# Data Analysis and Its Uses

1. We need to turn data into insights
2. Options:
    a. We can qualitatively analyze it
    b. We can use features of our data set
    c. We can use Statistical models
    d. Or we can use all of the above
3. Outcomes:
    a. Make effective business decisions
    b. Make good policy based on quantitative analysis
    c. Test Validity of statements

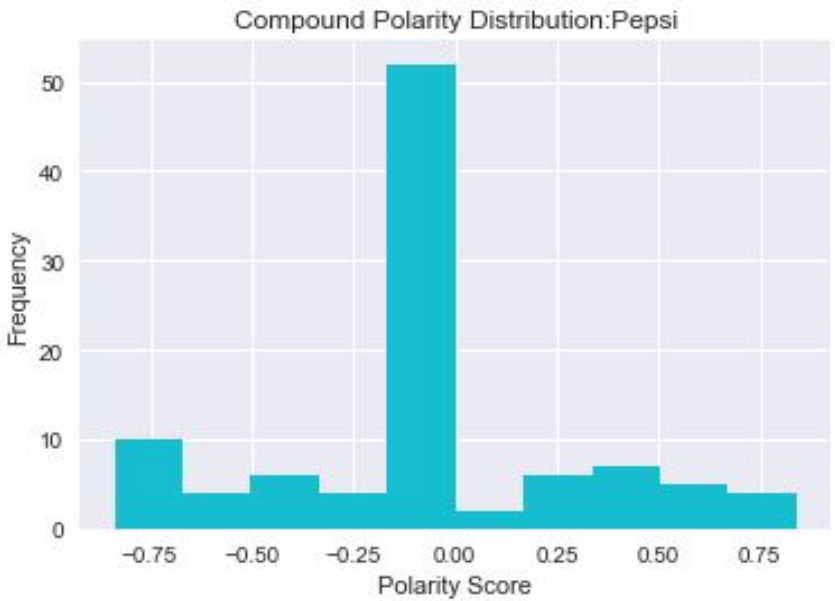
# Regression Model Example Using Python

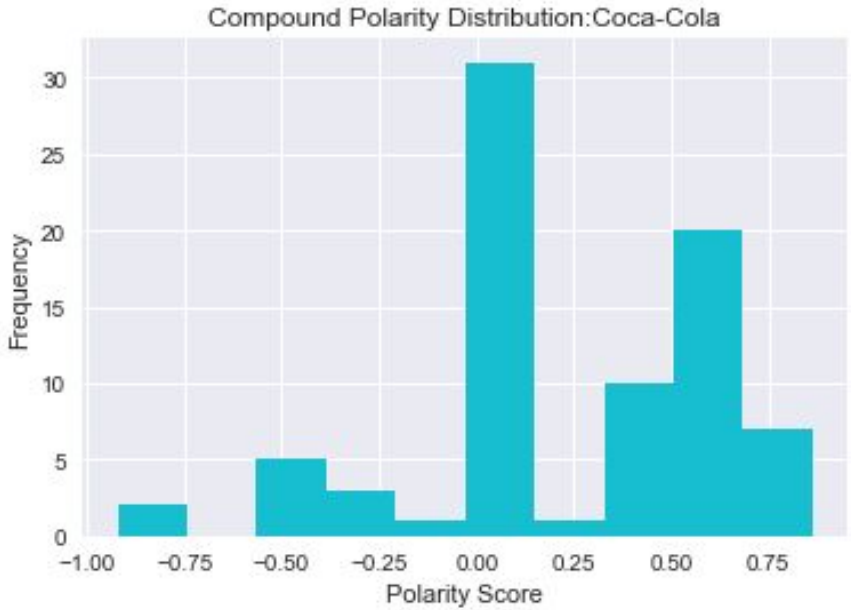
1. Problem:
   a. You work for a policymaker and he recently passed a policy which increased the cost of parking tickets. He hoped that by doing this, the number of parking violations would decrease and he asks you to test to see if this was the case. He also wants you to tell him to give an estimate of how much did parking tickets decrease by.
2. Solution:
   a. We can run a regression to estimate both of these and test the validity of the policy.
3. Model:
   a. $Y=mX+B$
   b. $Violations=M(Policy) + B$
   c. $Crime\_Rate= m(Immigrants) + m_2(Unemployment) + m_3(Temp) + Constant$

# Twitter Data Demo

1. Problem:
    a. You are part of a public relations team for Coca-Cola and you want to know how people view your brand as compared to Pepsi. Assume that the other members of your team are in charge of other metrics, and you are only in charge of public opinion.
2. Solution:
    a. We can turn to twitter and do Sentiment Analysis to compare what they think about Coca-Cola.
    b. We will use an Algorithm that reads Twitter Data and gives it a score from -1 : 1 based on how negative or positive the responses are.

# Results of Sentiment Analysis



# The Demand for Data Professionals

Table 4. Share of DSA Category Demand by Industry

| DSA Framework Category | Professional Services | Finance & Insurance | Manufacturing | Information | Health Care & Social Assistance | Retail Trade |
|---|---|---|---|---|---|---|
| Data-Driven Decision Makers | 23% | 17% | 16% | 10% | 6% | 6% |
| Functional Analysts | 23% | 34% | 9% | 5% | 8% | 4% |
| Data Systems Developers | 41% | 14% | 14% | 10% | 5% | 3% |
| Data Analysts | 34% | 25% | 9% | 6% | 7% | 3% |
| Data Scientists & Advanced Analysts | 31% | 23% | 12% | 10% | 6% | 4% |
| Analytics Managers | 21% | 41% | 9% | 9% | 6% | 3% |