



# Coding Girls

Curvatura Data Science



Promosso da In collaborazione con



# Lesson Outline

- Presentazione del progetto
- Correlation is not causation
- kahoot game
- statistica
- ISTAT



# I dati siamo noi

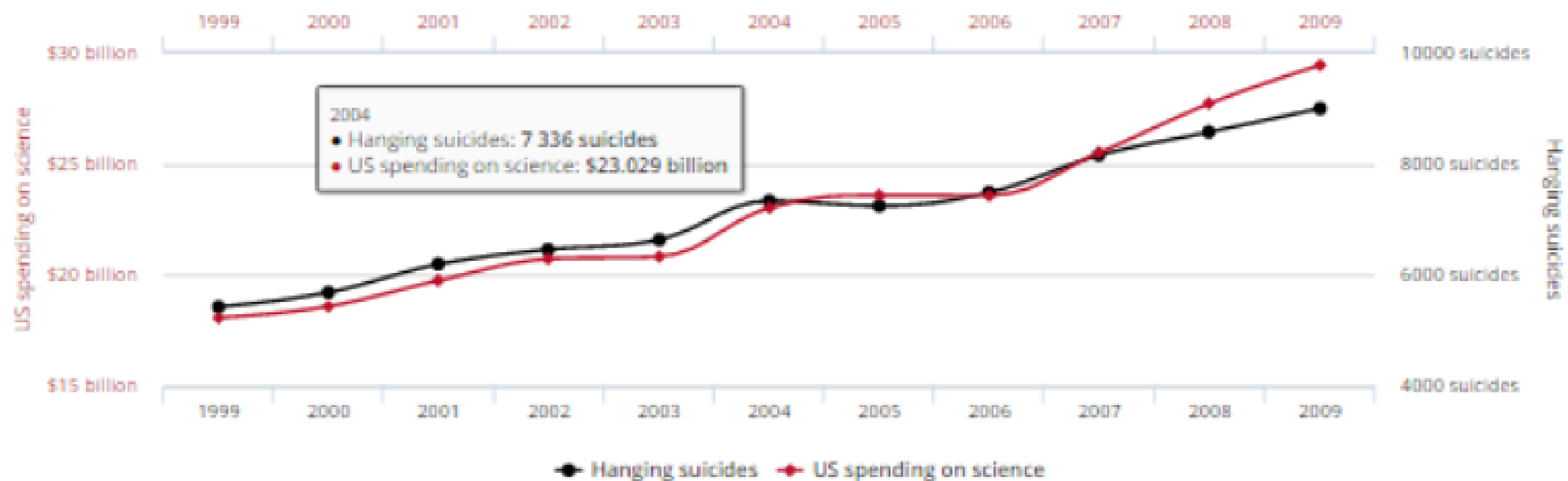
- I dati consentono di digitalizzare la realtà, descrivendo un fenomeno attraverso un codice numerico o testuale
- I dati veicolano informazioni, che però necessitano di opportune tecniche e adeguati strumenti per essere estratte
- La statistica è quella disciplina che fa da ponte tra i numeri e l'informazione





## US spending on science, space, and technology correlates with Suicides by hanging, strangulation and suffocation

Correlation: 99.79% ( $r=0.99789126$ )



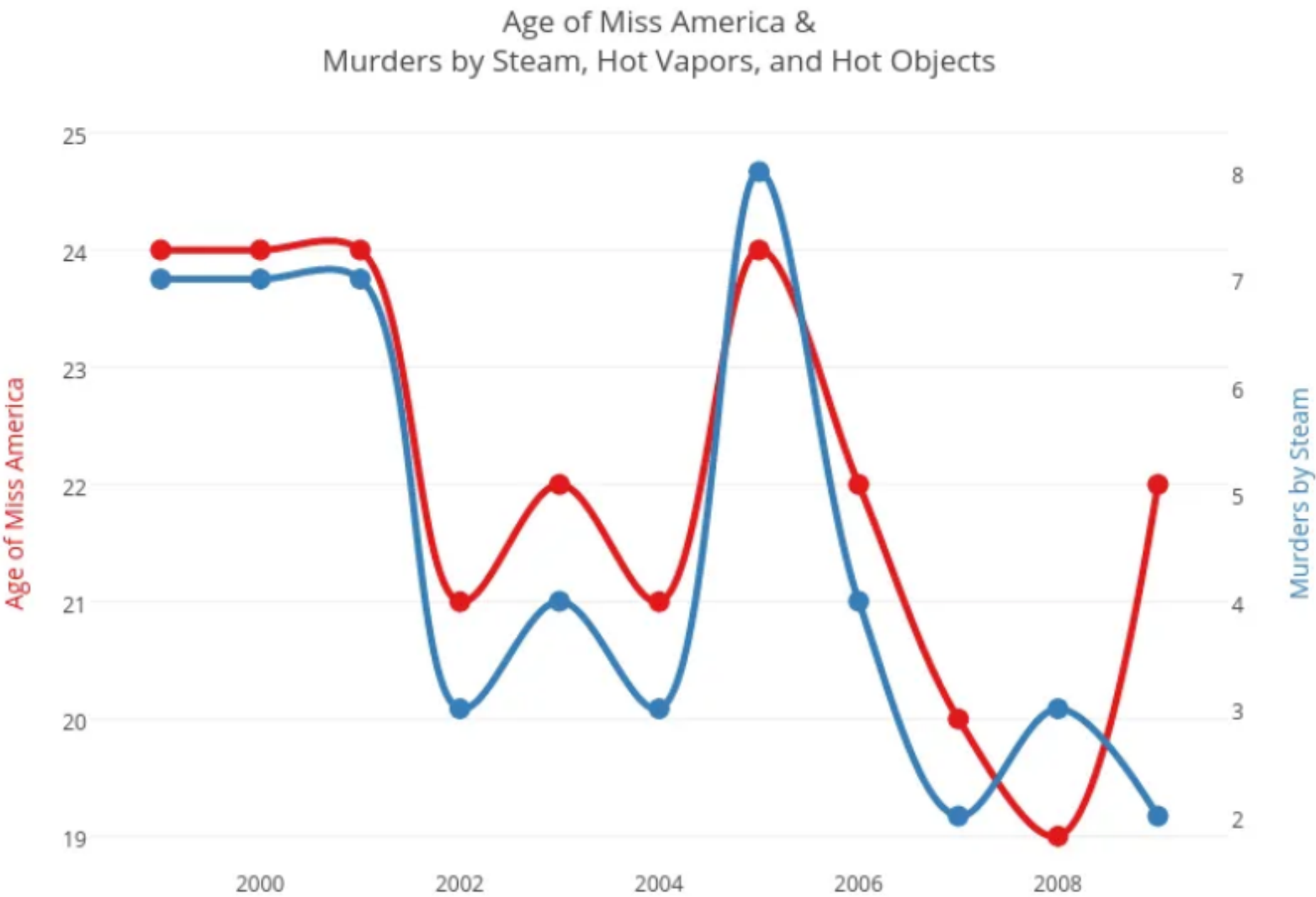
U

S

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4. Age of Miss America and Murders by Hot Objects

The relationship between these two from 1999 to 2006 has the wow factor.



Source: Spurious Correlations

[See the interactive plot](#)

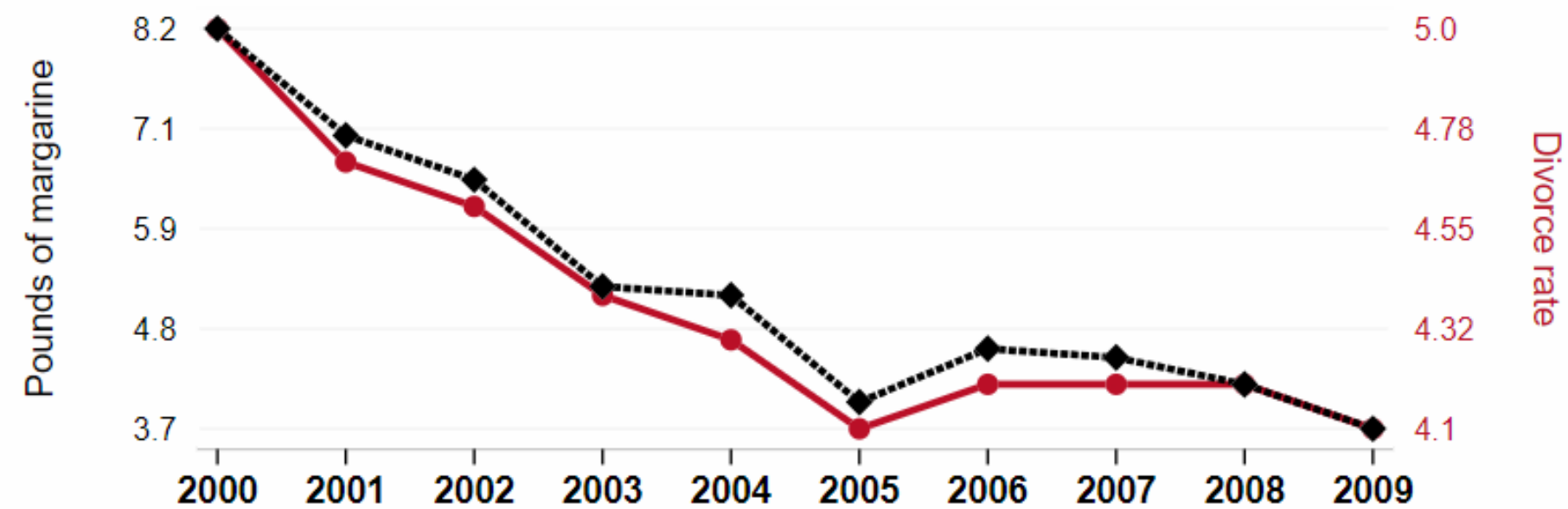


Fonte: Spurious Correlations

## Per capita consumption of margarine

correlates with

### The divorce rate in Maine



◆ Per capita consumption of margarine in the United States · Source: US Department of Agriculture

● The divorce rate in Maine · Source: CDC National Vital Statistics

2000-2009,  $r=0.993$ ,  $r^2=0.985$ ,  $p<0.01$  · [tylervigen.com/spurious/correlation/5920](http://tylervigen.com/spurious/correlation/5920)

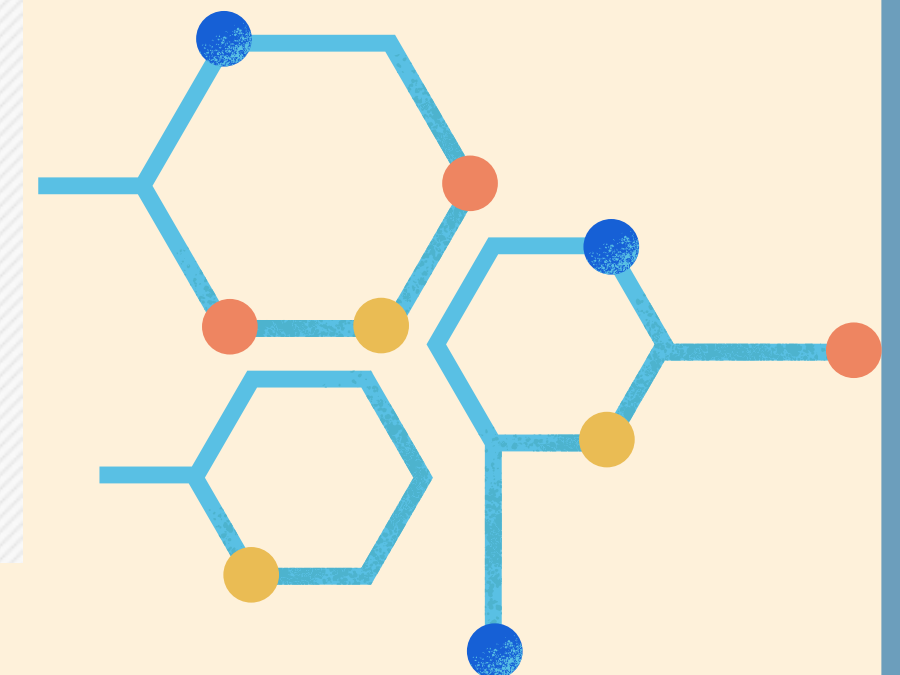
[View details about correlation #5,920](#)

*Spreading Love and Margarine: An Examination of the Butter-Splitter Correlation in Maine*

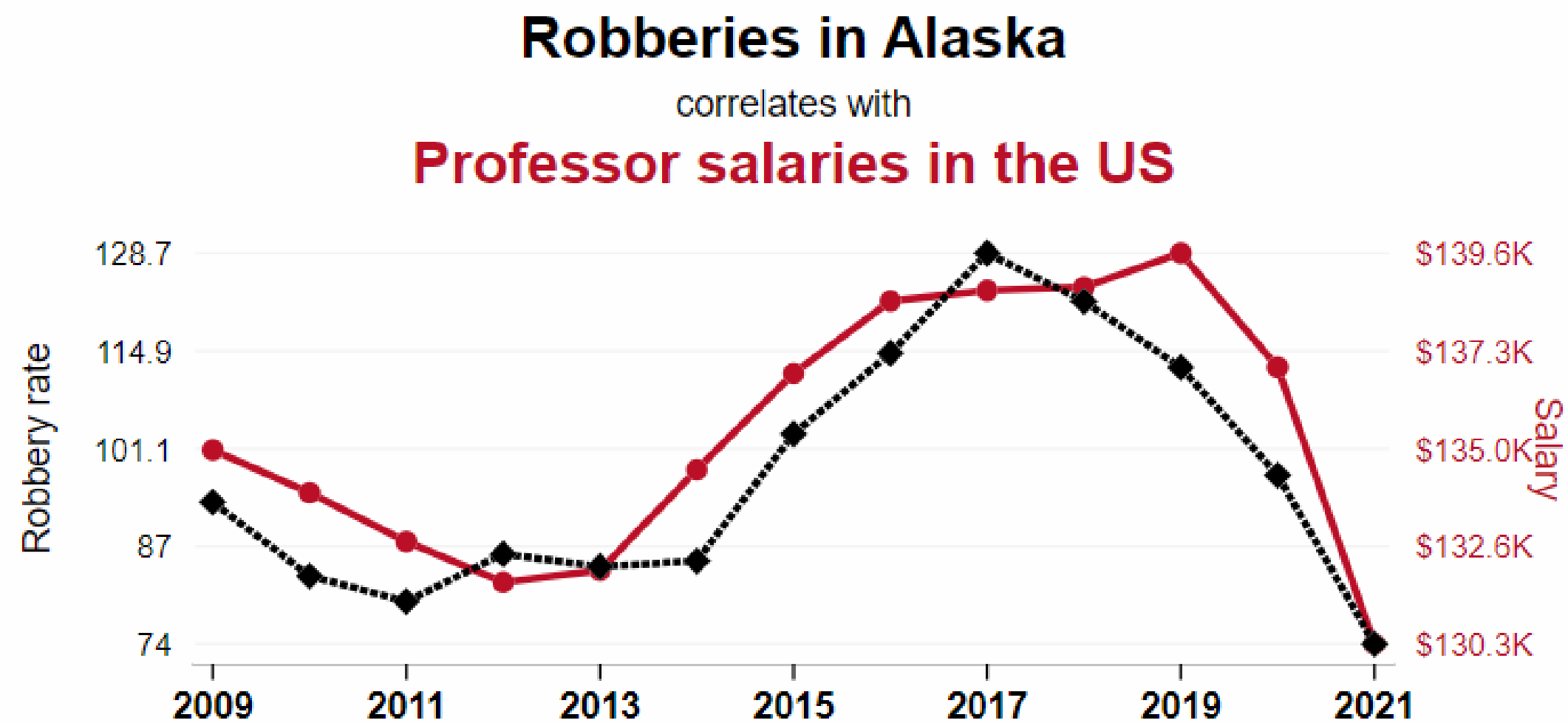
[Show GenAI's made-up explanation](#)

[Show GenAI image](#)

[Show scatterplot](#)



Fonte: Spurious Correlations



◆ The robbery rate per 100,000 residents in Alaska · Source: FBI Criminal Justice Information Services

● Average salary of full-time instructional faculty on 9-month contracts in degree-granting postsecondary institutions, by academic rank of Professor · Source: National Center for Education Statistics

2009-2021,  $r=0.922$ ,  $r^2=0.851$ ,  $p<0.01$  · [tylervigen.com/spurious/correlation/2723](https://tylervigen.com/spurious/correlation/2723)



Fonte: Spurious Correlations

# **Per questo è importante avere un approccio critico e capire come vengono analizzati i dati**

"Torture the data, and it will confess to anything." - Ronald Coase

"Statistics: The only science that enables different experts using the same figures to draw different conclusions." - Evan Esar





# Quick Game



# Che cos'è la statistica?

## Statistica e Metodo Scientifico



... e qual è il ruolo dei data scientists?



# Nelle prossime puntate...



formazione dei gruppi e scelta del dataset



ancora più statistica con R



lavori di gruppo

