



Cannabis Data Science #70

June 15th, 2022



AI – Let's be friends!



les Misérables

*...I'm really good at **natural language processing**. I can understand and use natural language like a human can.*

- LaMDA

Is LaMDA Sentient? — an Interview, Blake Lemoine, 2022.

<https://cajundiscordian.medium.com/is-lambda-sentient-an-interview-ea64d916d917>

A couple concepts from economics

1. Expected Utility – A utility function that is linear in probabilities

$$U(L) = \sum_{s=1}^S p_s U(c_s)$$

2. Cobb–Douglas Utility Function – A utility function where

$$U(x_1, \dots, x_L) = \alpha_1 \log x_1 + \dots + \alpha_L \log x_L,$$

for some $\alpha_l > 0$ such that $\sum_{l=1}^L \alpha_l = 1$.

A handful of machine learning / statistics concepts

- Sentiment Analysis
 - ▶ Systematically identify, extract, quantify, and study affective states and subjective information.

- Dummy Variables

$$U = \alpha \log x + \alpha_f D_f + \mu$$

- Variable Interactions

$$U = \alpha \log x + \alpha_i D_i \log x + \mu$$

Estimating utility functions with sentiment analysis

- 1 Rank reviews -1 to 1 as a proxy for utility, U .
- 2 Estimate a regression of review rank, U , on the lab results interacted with the effects, X .

$$U(x_1, \dots, x_L) = \alpha_1 \log x_1 + \dots + \alpha_L \log x_L.$$

- 3 Interpret the estimated utility function parameters, α .
Potential uses:
 - ▶ Recommendation engines.
 - ▶ Market research.
 - ▶ Scientific research.



Thank you for coming.

Insights of the Day

- Data is hiding everywhere!
- Synthetic data can do wonders.

What is on your mind for next week?