Economic Narratives Generator

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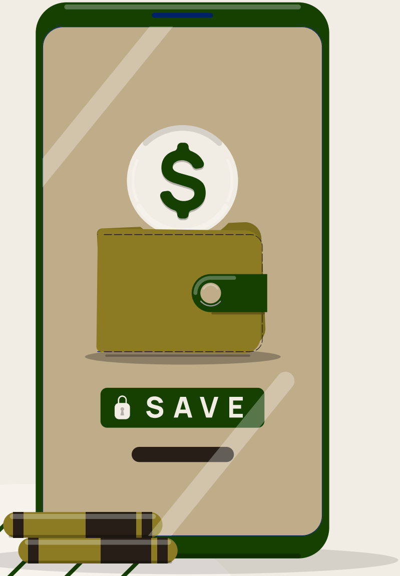
BACKGROUND

The context: When you're a wealth manager, timing is critical whether you're deploying a winning investment strategy or safeguarding assets against recessions.

The question: How might we confidently predict the timing of the next recession so that wealth managers can make better decisions to grow or safeguard their clients' finances?

The targeted audience: Wealth Managers of all skill levels (from professionals to amateurs managing personal finances) over age 18 who are managing US-based assets.

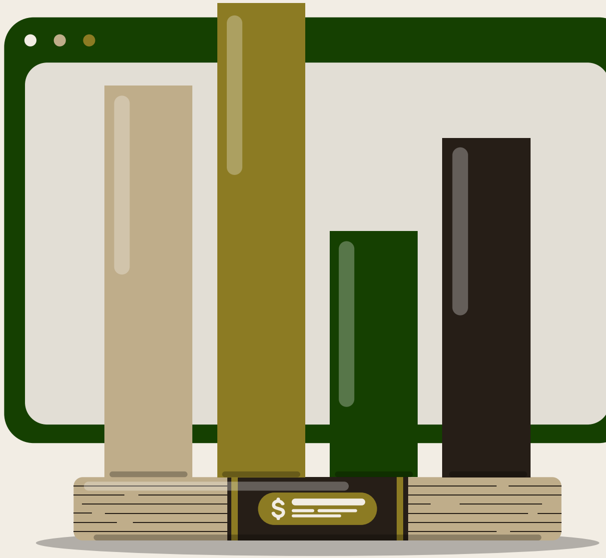


Problem Statement!

This project attempts to predict the timing of the next recession to help wealth managers of all skill levels make timely decisions that can grow or save their clients' wealth.

01

Economic Indicators



Consumer Confidence

When consumers are confident, they are more likely to spend money.

Leading Economic Index

A composite index that is designed to predict future economic activity.

Consumer Price Index

Average change over time in the prices paid by consumers for a basket of goods

GDP Growth

How much more value is being produced in the economy compared to a previous period.

Unemployment Rate

The percentage of the labor force that is unemployed and actively seeking employment.

Recession Probabilities

The likelihood or chance that an economy will enter a recession

Federal Funds Rate

The interest rate set by Federal Reserve

Yield Spread

It's the yields between two different debt instruments, qualities and maturities.

Currency Strength

Here, it is the value of the US Dollar relative to other currencies.

Housing Starts

The number of new residential construction projects in a specified period.

Personal Consumption Expenditures

The measure of the value of goods and services consumed by households.

Producer Price Index

It's the yields between two different debt instruments, qualities and maturities.

S&P 500

The stock market index that measures the performance of 500 largest publicly traded companies in the U.S.

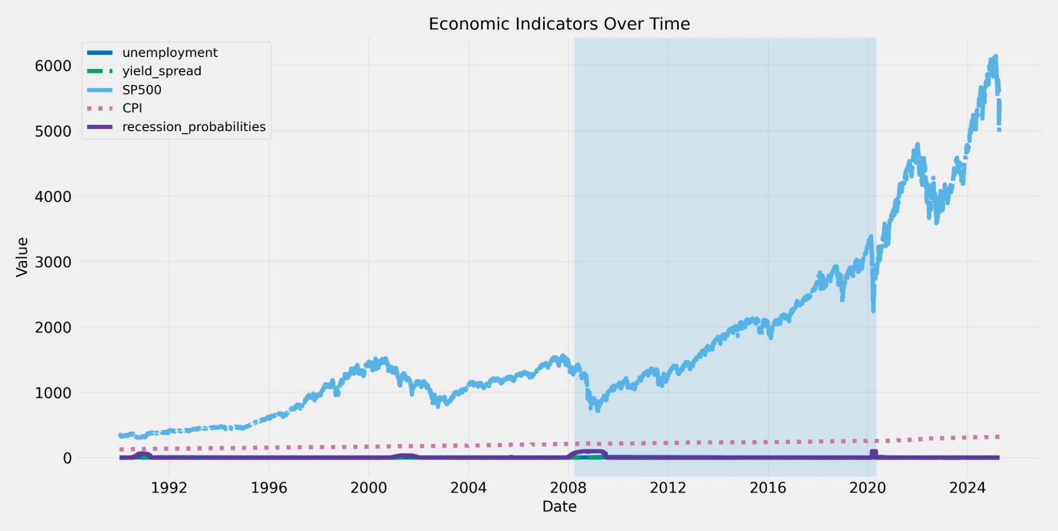
Industrial Productivity

The output of the industrial sector of the economy, including manufacturing, mining, and utilities.

02

Exploratory Data Analysis

- S&P 500 reflects forward-looking investor sentiment — major drops anticipate economic slowdowns and recessions.
  - We used it to observe market confidence before and during downturns.
- Yield spread (10Y-2Y) is a proven leading indicator — inversions often precede recessions by 6–18 months.
  - Our plot confirmed this signal before 2001, 2008, and 2020.



- Unemployment is a lagging indicator — it spikes after recessions begin, reflecting labor market damage.
  - We included it to understand recession severity, not predict timing.
- CPI tracks consumer inflation — it rises steadily over time, with subtle cooling during recessions.
  - While not a direct predictor, it's essential for understanding Fed policy context.
- Recession probabilities serve as a reference label — aligning closely with real recession periods for supervised learning.
  - These spikes validate ground truth for model training and evaluation.

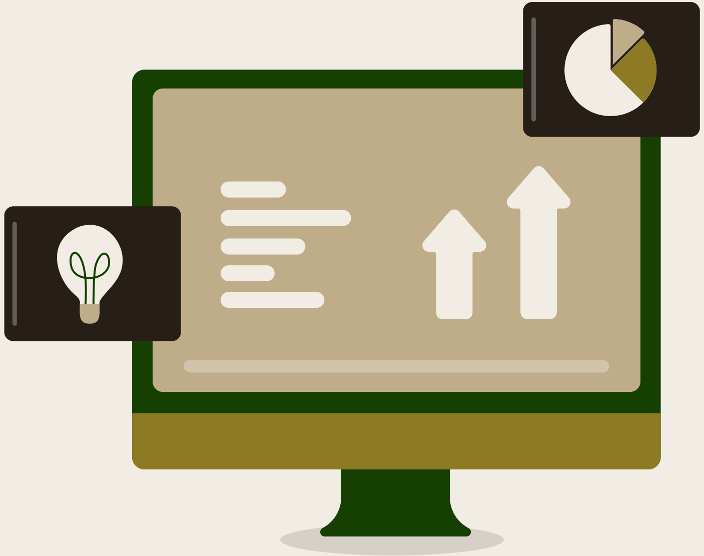
TRAINING ML MODEL

Random Forest

Ultimately, we chose Random Forest because we are tackling a classification problem, and it's pretty fast.

Accuracy

We measured the performance of the model’s sentiment classifier on accuracy.



03

GPT-2

AGENT DEMO