

PoliWatch

Identifying Conflicts of Interest in
the Securities Transactions of U.S.
Congressional Members

Problem Statement

Congress has an insider trading problem. Can the American people be sure that congressional members are acting in the best interest of the public over private investment portfolios?



Stock trades reported by nearly a fifth of congress show possible conflicts

– The New York Times





Quiver Quantitative @QuiverQuant
 We have caught over 200 Members of Congress violating the STOCK Act.
 Only a few have been investigated.
 U.S. Representative Chris Collins was convicted of insider trading in

The Big Read US politics & policy
US Congress: how investment funds became the new insider trading risk
 Lawmakers are subject to strict reporting requirements on stocks, but the rules on funds are lighter thanks to a decades-old exception

Conflicted Congress': Key findings from Insider's five-month investigation into federal lawmakers' personal finances
 Dec 17, 2021, 8:43 AM PST



Inside Ethics Group Says 7 House Lawmakers Didn't Disclose Stock Trades
 SEPTEMBER 23, 2021 · 1:21 PM ET
 ON ALL THINGS CONSIDERED
 Airde Walsh

Congress Stock Watcher @SenateStock · May 12
 Rep Michael Simpson (ID02) filed a strategic disclosure today.
 Strategic in the sense that 21 of the 22 trades violate the STOCK ACT.
 By Monday, the ethics committee will have a list just clocked out a few hours ago.

CONGRESS
Lawmakers made hundreds of stock transactions during pandemic, watchdog finds
 The nonprofit is calling for laws that would ban lawmakers from making individual stock trades.

Home / Money / Investing / Stock Market News / Insider Trading in Congress

Does Congress Have an Insider Trading Problem?

Allegations of senators inside an easy fix.

Nancy Pelosi makes millions off tech stocks – and scoffs at push to ban congressional trades



>25,000

Trades made by
congressional
members since 2012

\$500M

Volume of trades
made by congress
since 2012



U.S. Congressional Securities Transactions

About
 Interactive Data Explore
 Trading Activity

(1) Select Politician:

Sen. David Perdue

(2) Select Transaction Ticker:

PFE

(3) Select Transaction Date:

2020-02-28

Fetch Transaction(s)

Selected Transaction Details:

Congress	Disclosure Date	Asset Description	Industry	Sector	Type	Amount	State	PTR Link
116	03/03/2020	Pfizer Inc.	Major Pharmaceuticals	Health Care	Purchase	\$15,001 - \$50,000	GA	https://efdsearch.senate.gov/search/view/ptr/c67b2ac7-642e-4601-8d9d-d7b613ec
116	03/03/2020	Pfizer Inc.	Major Pharmaceuticals	Health Care	Purchase	\$15,001 - \$50,000	GA	https://efdsearch.senate.gov/search/view/ptr/c67b2ac7-642e-4601-8d9d-d7b613ec
116	03/03/2020	Pfizer Inc.	Major Pharmaceuticals	Health Care	Purchase	\$1,001 - \$15,000	GA	https://efdsearch.senate.gov/search/view/ptr/c67b2ac7-642e-4601-8d9d-d7b613ec

Generate Relevant Info

[Assignments & Hearings](#)
[Bills](#)
[Travel & Statements](#)

Sen. David Perdue's Committee Assignments:

Committee Name	Similarity
United States Caucus on International Narcotics Control	0.7095
Committee on Banking, Housing, and Urban Affairs	0.7056
Committee on Armed Services	0.7009
Committee on Agriculture, Nutrition, and Forestry	0.6998
Committee on the Budget	0.6588

Sen. David Perdue's Hearings:

Hearing Date	Hearing Description	Similarity
2019-04-02	Hearings to examine the application of environmental, social, and governance principles in inv	0.6892
2019-12-03	Hearings to examine testimony from the Government Accountability Office on privatized housi	0.6843
2019-06-11	Hearings to examine the global narcotics epidemic and the United States strategy to confront t	
2019-12-10	Business meeting to consider the nominations of Mitchell A. Silk, of New York, to be an Assistar	
2019-06-18	Business meeting to consider the nominations of Thomas Peter Feddo, of Virginia, to be Assistar	
2019-03-13	Hearings to examine the nominations of Heath P. Tarbert, of Maryland, to be Chairman, and to	



5th Year MIDS
Capstone Project (Fall 2023)

Matthew Dodd, Aditya Shah, Jocelyn Thai, Connor Ethan Yen
0.666
0.6656
0.6656

Example: Sen. David Perdue

Transaction Report | March 3rd, 2020

- Purchased \$150k worth of shares in Pfizer
- Purchased \$100k worth of shares in DuPont
- Sold \$50k worth of shares in Caesar's Entertainment



Investigative journalism uncovered that Sen. Perdue attended a hearing on Jan 24, 2020 about **how COVID would impact the U.S.**

Associated Press

How Georgia's Sen. David Perdue cashed in with coronavirus stock trades

Published: Nov. 25, 2020 at 9:26 p.m. ET

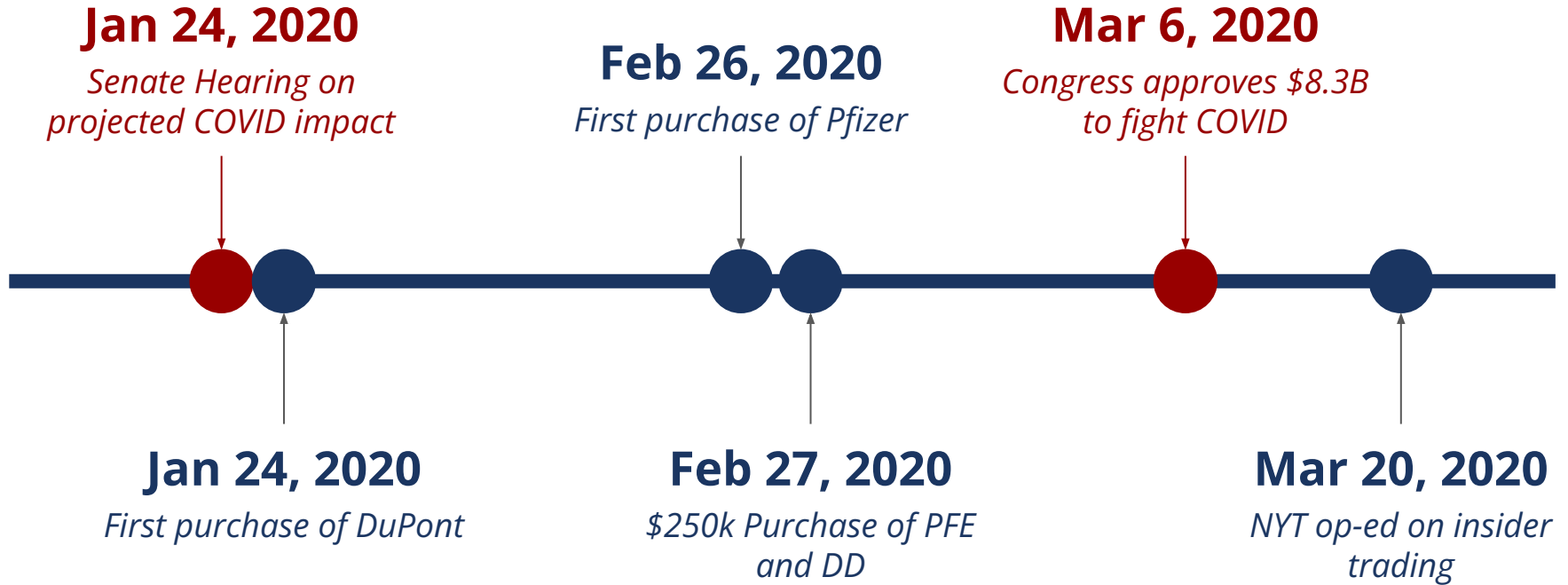
By [Associated Press](#) [Follow](#)

Legal experts say trades merit scrutiny as to whether he used his position to make investment decisions

The New York Times

Stock Trades by Senator Perdue Said to Have Prompted Justice Dept. Inquiry

Timeline for Sen. Perdue



What if a tool existed that automatically provided potential sources of insider information for Senator Perdue's stock trades?



The Team



Matthew Dodd

Data Engineer & App Developer



Aditya Shah

Data & ML Engineer



Jocelyn Thai

Data Engineer & App Developer



Connor Ethan Yen

Project Manager & Lead



Spencer Zezulka

Data Engineer



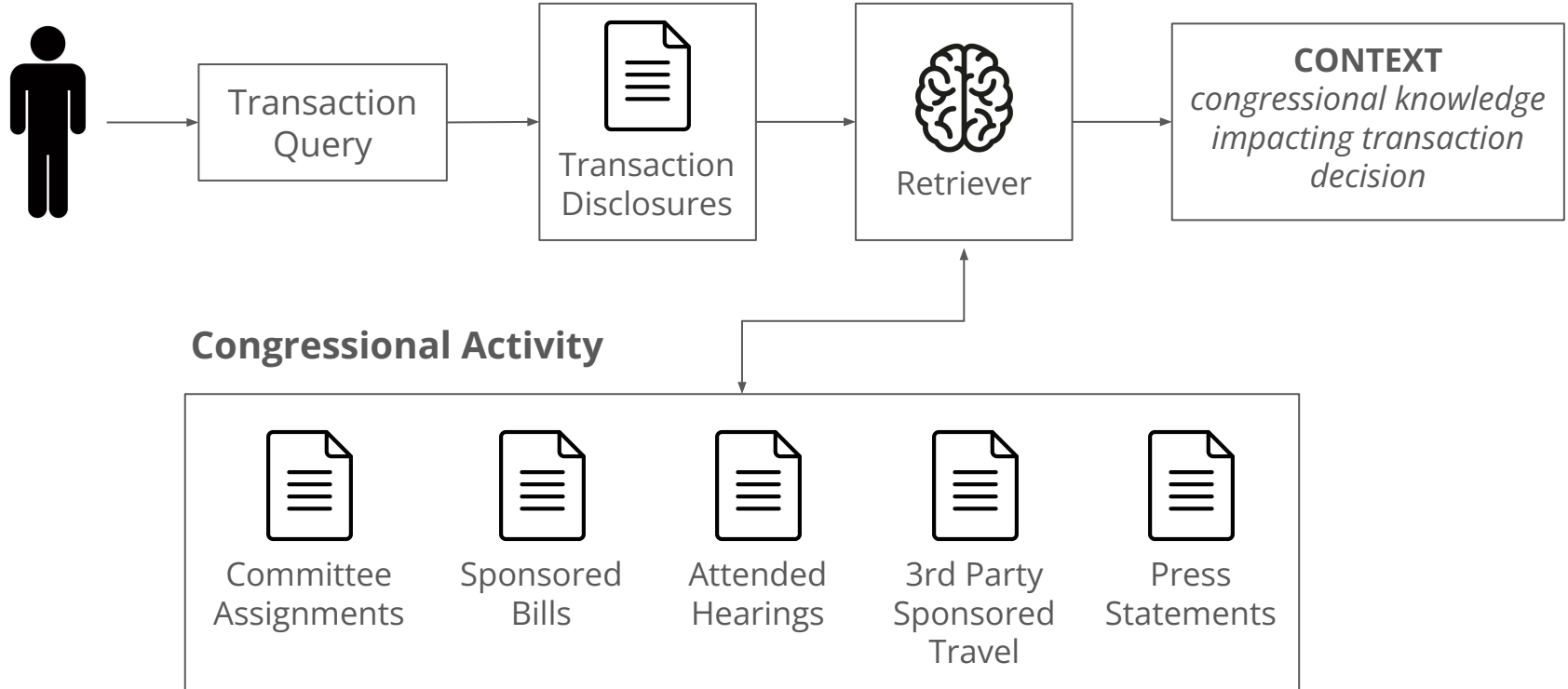
The American Public

Our Product

A dashboard that uses AI on top of a first-of-its-kind dataset to contextualize securities transactions with relevant congressional activity.



How it Works



Demo

Berkeley
UNIVERSITY OF CALIFORNIA

We Built a Golden Linked Data Set

Volume

All transaction disclosures.
Hundreds of thousands of sources of context.

Variety

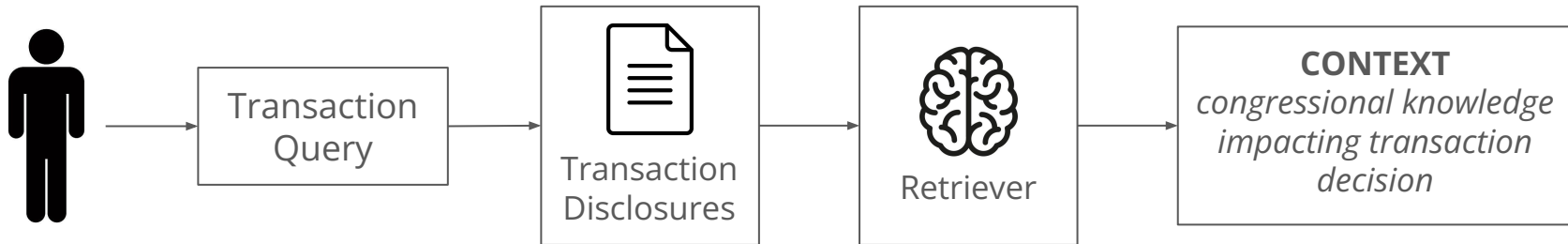
Pull context from a wide range of government and news sources.

Velocity

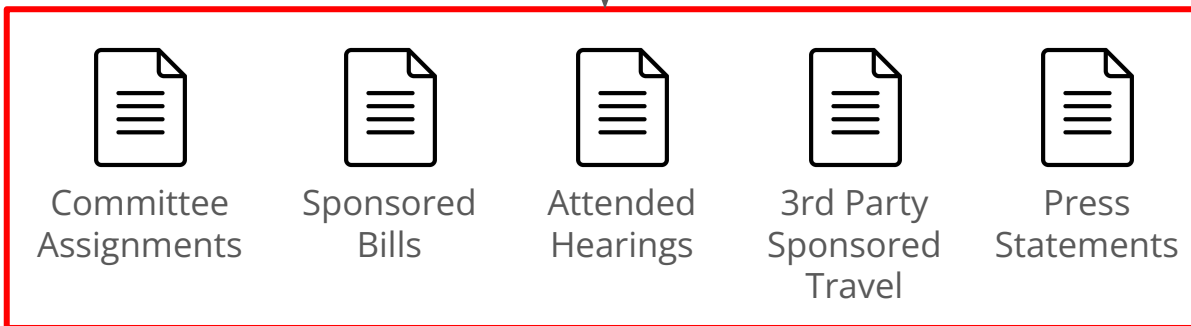
Analyze transactions as they are filed.

Veracity

Contextual data has legal governance assuring its integrity.



Congressional Activity



>25,000

Transactions
disclosed to the
House Clerk and
Senate Ethics
Committee

94%

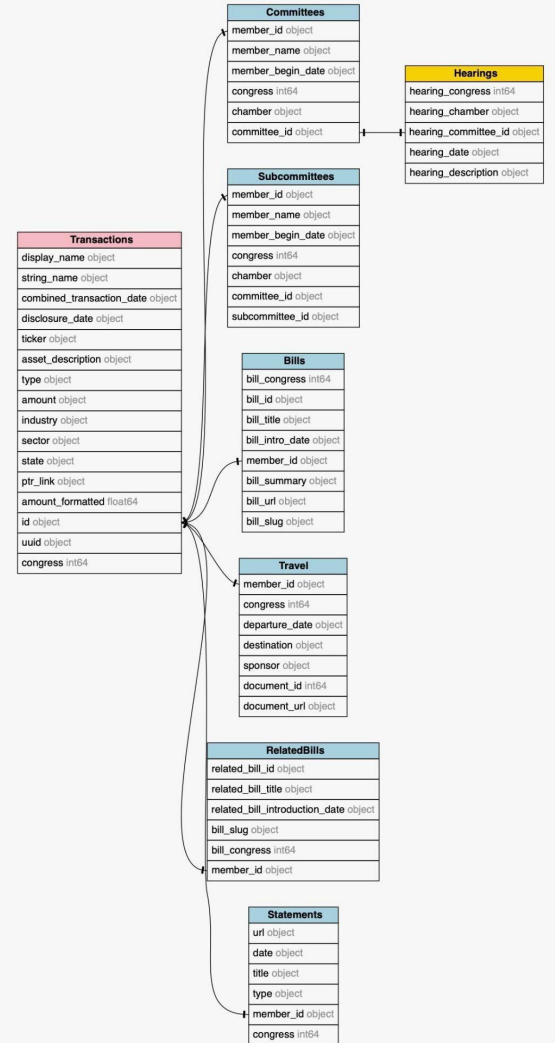
Cleaned transactions
that can be analyzed
through our product

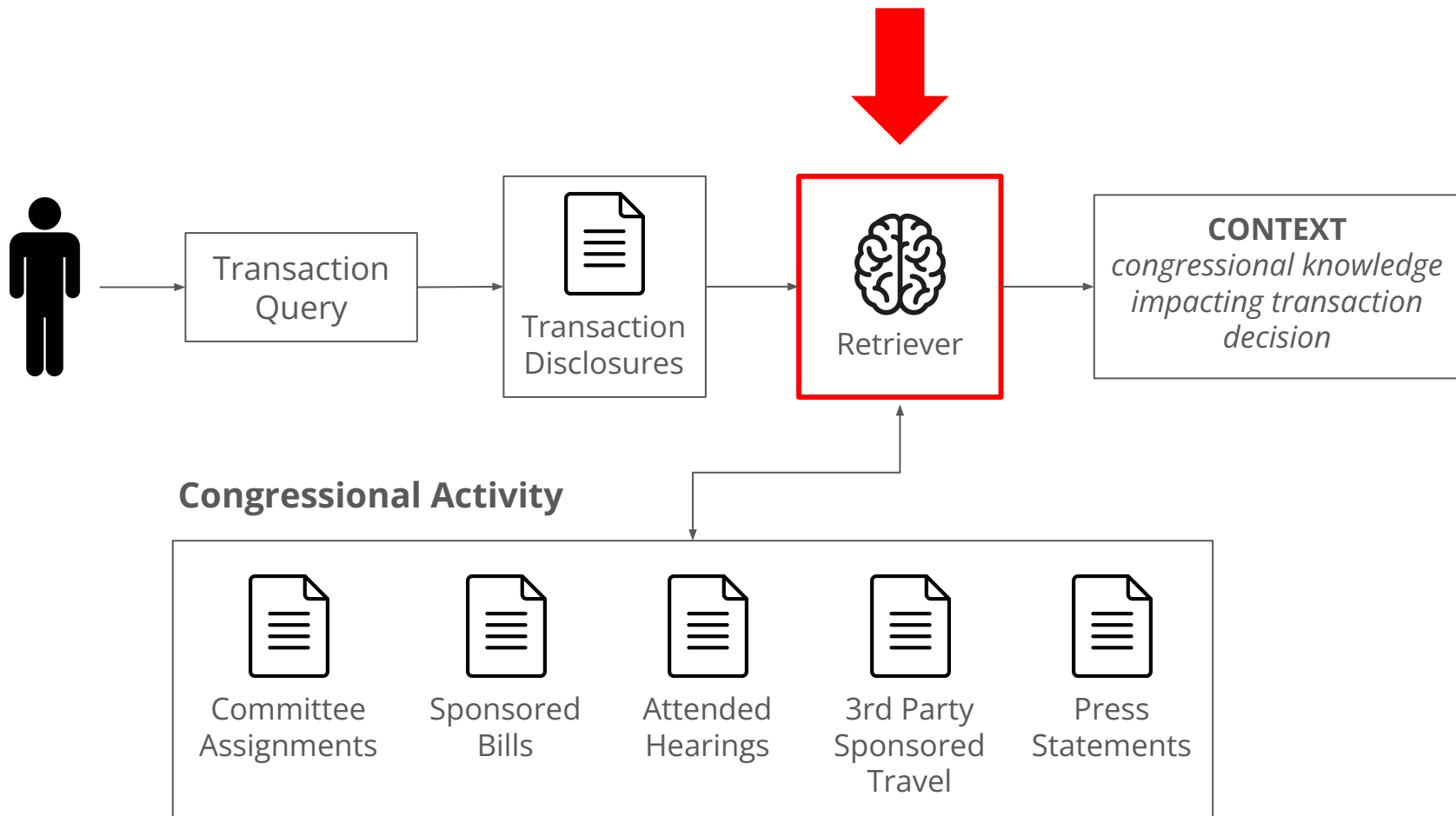
Data Structure

- Committee assignments
- Sponsored/Co-sponsored bills
- Committee-hosted hearings
- 3rd party-sponsored travel disclosures
- Press releases (via ProPublica)
- 25,685 Transaction, 300K Documents
- 286 members of congress

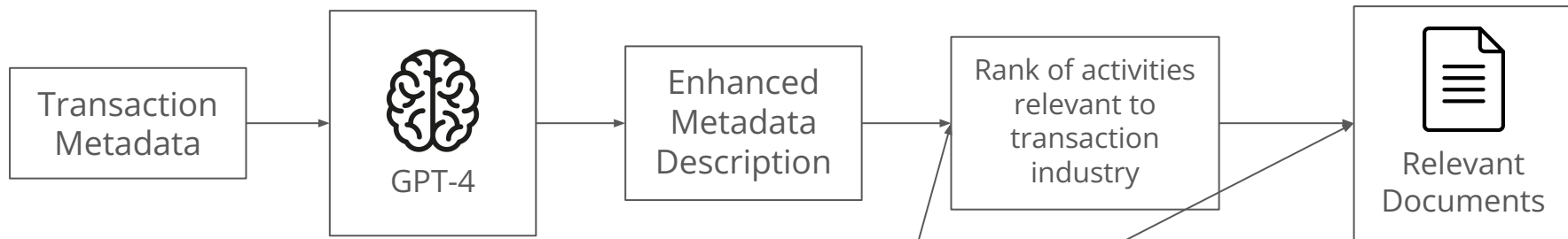


Data Schema

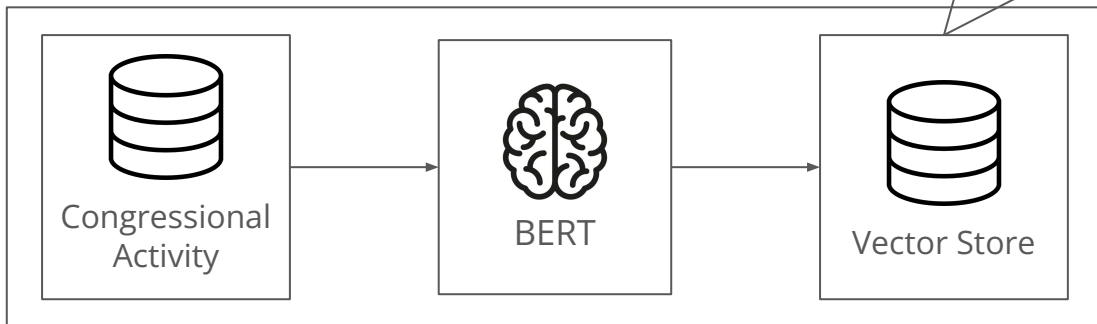




Retriever Architecture



Ingestion



Performance and Evaluation

Correctly retrieve relevant pieces of information cited by The New York Times and Associated Press in their COVID insider trading allegations against Senators Perdue, Feinstein, Inhofe, Loeffler, and Burr.

The New York Times

They. Sold. Their. Stock.

They could have made a difference, but they made a profit.

March 20, 2020



Sen. Richard Burr, Republican of North Carolina, on Capitol Hill in 2018. Burr and Sen. Kelly Loeffler, Republican of Georgia, sold large amounts of their personal stock holdings before the market declined sharply due to the coronavirus. Erin Schaff for The New York Times

Evaluation

- 12/13 pieces of information cited by the NYT and AP identified by our model.
- Assess 58 transactions listed in the DOJ probe on congressional trading during COVID.
- Manually identify 117 pieces of information in our database that are relevant to the transactions.
- Retriever **identifies 91% of the tagged information** as top-10 most relevant points to their respective transactions.

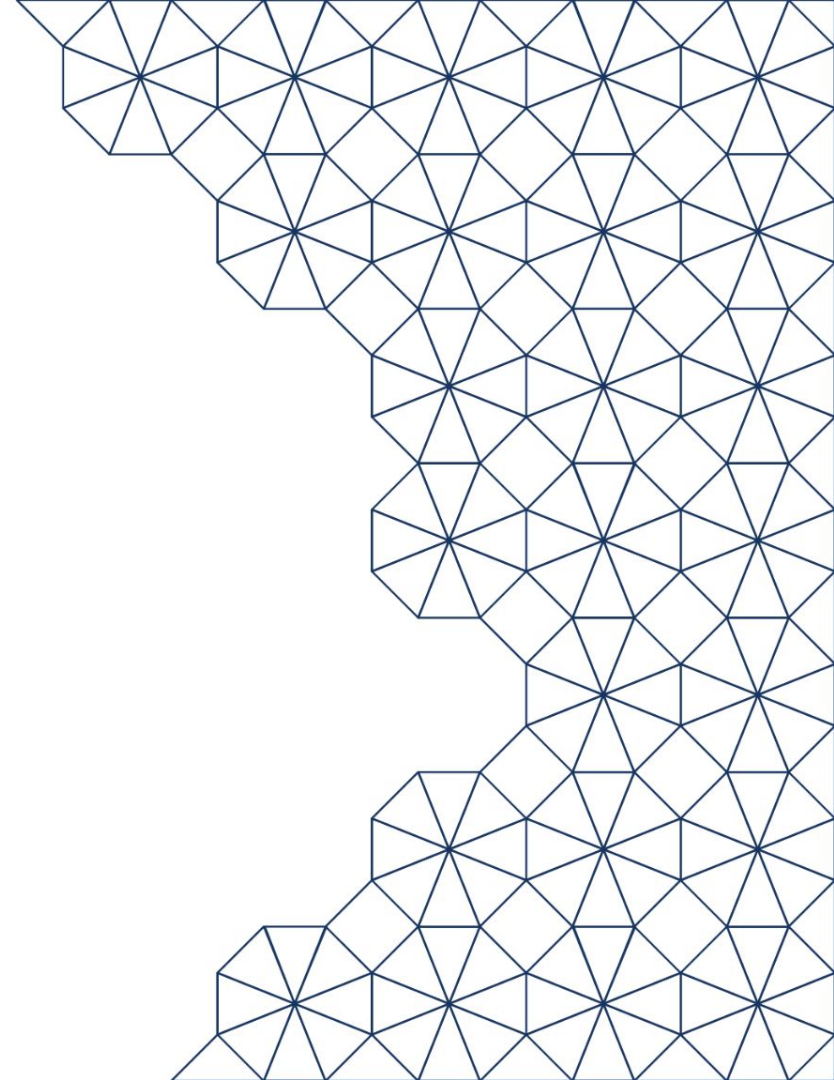


Challenges and Key Learnings

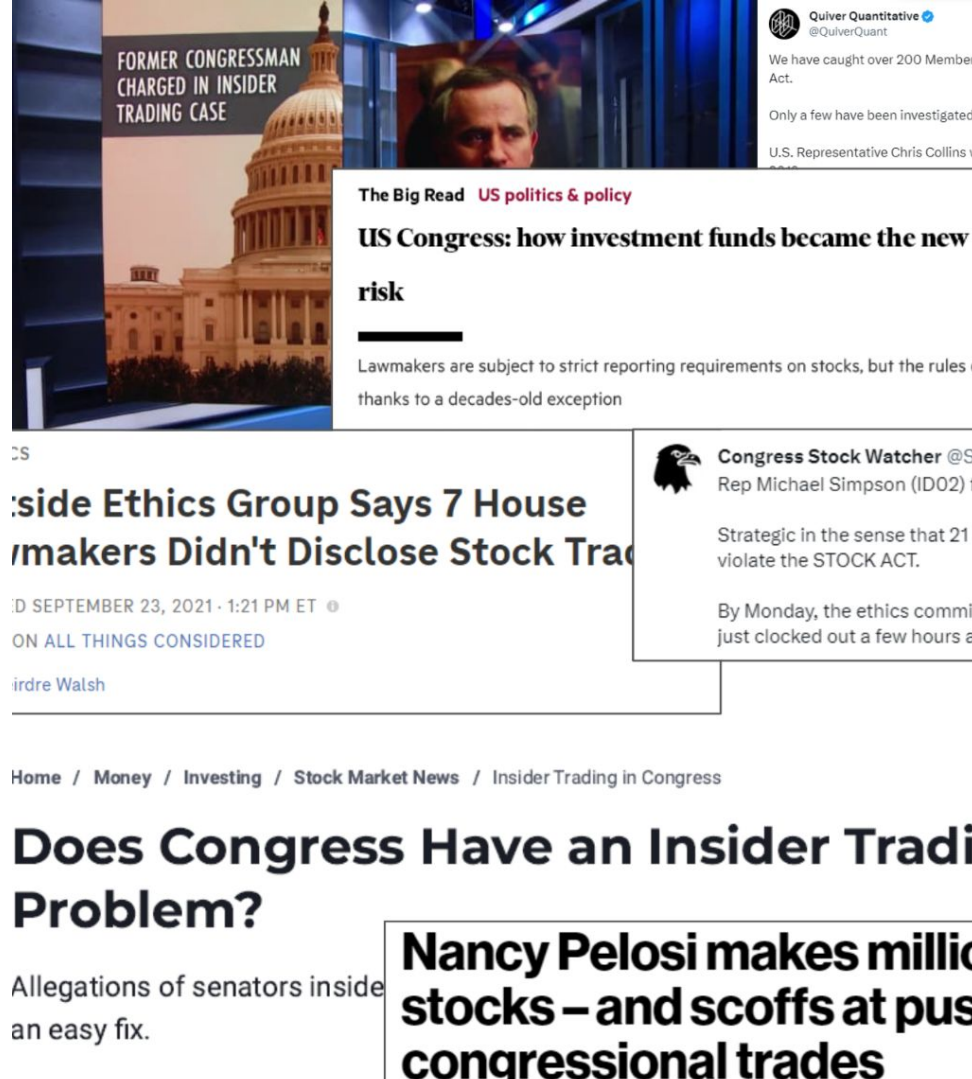
Challenges	Solutions
Data is from various sources.	Create a centralized linked database.
Information retrieval without compromising completeness.	Rank documents according to transaction relevance and develop heuristic filters (e.g. date cutoffs).
Computation of embeddings and semantic similarity is expensive.	Batch process context documents. Vectorize similarity computation.
Project staffing was highly dynamic due to unforeseen personal issues.	Ensure that each phase deliverable produced deployable value.

Future Direction

- Live data ingestion
- RAG-type chatbot
- Transaction disclosures from top-executives
- Legal actionability



Congress has an insider trading problem. We must hold Congress accountable to restore the American public's faith in government.



FORMER CONGRESSMAN CHARGED IN INSIDER TRADING CASE

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U.S. Representative Chris Collins

Congress Stock Watcher @CongressStock

Rep Michael Simpson (ID02)

Strategic in the sense that 21% of all members of Congress violate the STOCK ACT.

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