

MOF: Model Openess framework | XBRL: Data Collection for fine tuning

MOF Hugging Face Space & SEC filing collection and retrieval



Tasks for Regulations Challenge @ COLING 2025:

Category	Tasks	Assess LLMs’ ability to	Example
Basic Capabilities	Abbreviation Recognition	recognize acronyms and stock tickers from financial regulatory texts.	IPO – Initial Public Offering ICO – Initial Coin Offering
	Definition Recognition	define terms and phrases used in financial regulatory and compliance documentation.	Stakeholder – a party who has an interest and might be affected by the performance and outcome of an entity’s business, project, or enterprise.
	Named Entity Recognition (NER)	identify and classify entities in a statement about financial regulation.	<u>Regulation (EU) No 648/2012</u> of the <u>European Parliament</u> and of the <u>Council</u> of <u>4 July 2012</u> on OTC derivatives, central counterparties and trade repositories (“EMIR”) entered into force on <u>16 August 2012</u> .
	Question Answering	answer questions about financial regulations accurately.	How do Basel III regulations, including the FRTB, aim to enhance market stability?
	Link Retrieval	retrieve and provide the exact link to specific regulations.	Regulation (EU) 2019/834 -- https://eur-lex.europa.eu/eli/reg/2019/834/oj
Passing Certificate	Certificate Question	pass CFA and CPA exams	Phil Jones, CFA,... is about to issue an unfavorable report on the company. His manager does not want him to state any adverse opinions...
XBRL Analytics	XBRL Analytics	interpret, and analyze XBRL filings	What is the value of Walt Disney Co's Total Assets for the Fiscal Year ending in FY 2023?
CDM	CDM	answer questions related to the Common Domain Model	How is the TradeState data type utilized to track changes in a trade lifecycle in the Common Domain Model?
MOF	MOF Licenses	answer questions about the licensing requirements outlined in MOF	What licenses are recommended for Model Parameters under the Model Openness Framework?

Tasks:
We are actively engaged in testing the Model Openness Framework (MOF), XBRL analytics, and mathematical capabilities outlined in the regulations challenge. Our focus is on evaluating the ability of large language models (LLMs) to perform key tasks, including abbreviation recognition, definition recognition, named entity recognition, financial question answering, and regulation link retrieval. Additionally, we are assessing LLMs' capacity to analyze XBRL filings, address certificate-related questions, and interact with the Common Domain Model (CDM). Through this, we aim to fine-tune models for high-accuracy performance in financial and regulatory contexts, ensuring robust decision-making support.

Testing Datasets:

Failure Cases

Model Openness Framework

Prompt:
What licenses are recommended for Model Parameters under the Model Openness Framework?

Generation:
Under the Model Openness Framework, the recommended licenses for model parameters are the Apache 2.0 and MIT licenses. These licenses are often chosen for their permissive nature, allowing for wide use, modification, and distribution while providing legal protection.

Why a failure case:
The model response is misinformation. To date, model producers have been releasing model parameters (i.e., weights and biases) using an open source software license, such as Apache 2.0 and MIT, even though model parameters are not compatible with such licenses. As outlined in MOF, since model parameters are in fact data, model parameters should be distributed under an open data license, like CDLAPermissive-2.0.

(L.A. & Data Blog)

Introducing the Model Openness Framework: Promoting Completeness and Openness for Reproducibility, Transparency and Usability in AI

By L.A. & Data Blog | April 17, 2024 | No Comments

XBRL Analytics

Prompt:
I am analyzing Coca Cola’s income statements and balance sheets to learn how the company performed last year. What is the return on assets (ROA) for Coca Cola in 2023?

Response:
To determine the Return on Assets (ROA) for Coca-Cola for FY2023, we need to calculate the ROA using the formula:

$$ROA = \frac{FY2023\ Net\ Income}{Average\ Total\ Assets}$$

From the provided XBRL data:

- Net Income for FY2023:** The net income for FY2023 is given as “us-gaap:NetIncomeLoss” with contextRef=”c-1”, which is \$10,714,000,000.
- Average Total Assets:**
 - Total Assets for FY2023: The total assets for 2023 is given as “us-gaap:Assets” with contextRef=”c-26”, which is \$92,763,000,000.
 - Total Assets for FY2022: The total assets for 2022 is given as “us-gaap:Assets” with contextRef=”c-23”, which is \$97,703,000,000.

We calculate the average total assets as:

$$Average\ total\ assets = \frac{FY2023\ Total\ Assets + FY2022\ Total\ Assets}{2} = \frac{92,763,000,000 + 97,703,000,000}{2} = 95,233,000,000$$

- Calculate ROA:**

$$ROA = \frac{10,714,000,000}{95,233,000,000} = 0.1125$$

Thus, the ROA for Coca-Cola for FY2023 is 11.25%.

THE COCA-COLA COMPANY AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(In millions except par value)

December 31,	2023	2022
ASSETS		
Current Assets		
Cash and cash equivalents	\$ 9,366	\$ 9,519
Short-term investments	2,997	1,043
Total Cash, Cash Equivalents and Short-Term Investments	12,363	10,562
Marketable securities	1,300	1,069
Trade accounts receivable, less allowances of \$502 and \$516, respectively	3,410	3,487
Inventories	4,424	4,233
Prepaid expenses and other current assets	5,235	3,240
Total Current Assets	26,732	22,591
Equity method investments	19,671	18,264
Other investments	118	501
Other noncurrent assets	7,162	6,189
Deferred income tax assets	1,561	1,746
Property, plant and equipment — net	9,226	9,841
Trademarks with indefinite lives	14,249	14,214
Goodwill	18,398	18,782
Other intangible assets	516	635
Total Assets	\$ 97,703	\$ 97,703