∧ arize

THE RISE OF

Generative AI In SEC Filings

One in five Fortune 500 companies now mention generative AI or large language models in their annual financial reports.

Introduction

From speeding up drug discovery to reducing time-to-merge for software engineers, the generative AI revolution is rapidly reshaping industries. Over two-thirds (66.9%) of developers and machine learning teams say they **plan to deploy** generative AI in some capacity this year – and more than one in ten (14.1%) already have real-world deployments of large language model (LLM) systems.

How are top companies communicating the benefits, risks, and overall impact of AI to investors and stakeholders? To answer this question, Arize reviewed the most recent (as of May 1, 2024) annual financial reports (10-Ks) of U.S.-based Fortune 500 companies, comparing the content to the same companies' reporting from 2022 and searching for terms like AI, machine learning, large language models, generative AI, and more.

Highlights

For an increasing number of companies, artificial intelligence is a necessary part of their regular reporting on business results.

108
Fortune 500 companies specifically mention generative AI in their annual financial reports

281
Fortune 500 companies cite AI as a potential risk factor

⬆ 250.1%
increase in the number of mentions of AI in Fortune 500 company annual financial reports since 2022

⬆ 473.5%
increase in the number of Fortune 500 companies citing AI as a risk factor in their annual financial reports since 2022

Recommendations

01

Showcase the Benefits of Generative AI, Not Just the Risks
Surprisingly, only 30.6% of companies that mention generative AI in their annual reports cite its benefits or use outside of the risk factor section – likely a missed opportunity given the potential upside to investors. While many enterprises likely err on the side of disclosing even remote AI risks for regulatory reasons, in isolation such statements may not accurately reflect an enterprise's overall vision – creating an opportunity.

02

Assess Current AI Infrastructure To Ensure Adequate LLM Evaluation and AI Observability
Only 30.1% of teams deploying LLMs **implement** observability today, despite large majorities wanting better tracing and debugging workflows and ways to objectively evaluate generative systems for accuracy, hallucinations, toxicity, and other issues. Ensuring a foundation for teams to automate and operationalize scientific experiments for LLM use cases at scale is key for ensuring reliability in production. Leveraging tools like Arize and open source frameworks like Phoenix to evaluate and troubleshoot LLM systems can help teams ensure responsible use of AI across the enterprise.

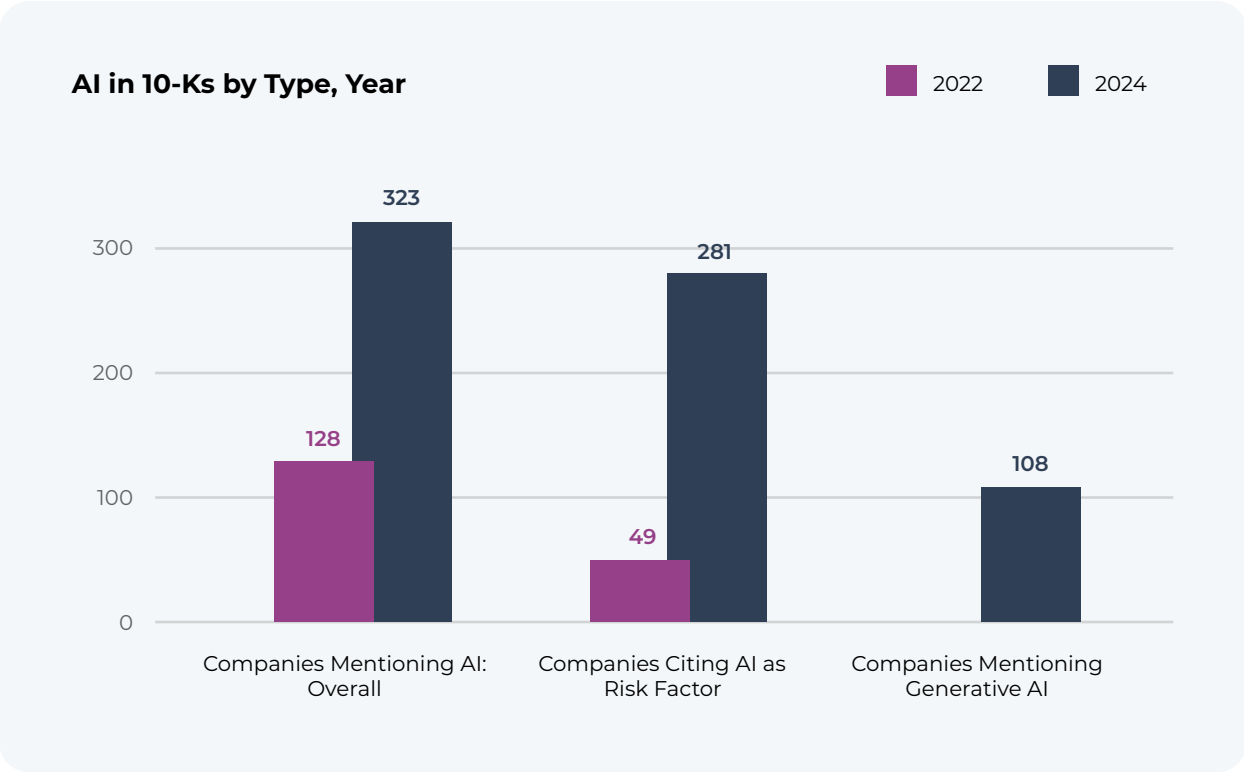**03**

Consider Disclosure If Warranted
The decision of whether to disclose AI risks in an annual report is likely unique to every company and industry. It is worth noting that media and entertainment, financial services, and software and technology companies lead all other industries in disclosing risks from AI (see examples below from each). As legal researcher Sylvia Lu **argues** in the Vanderbilt Law Review argues, "the current disclosure framework does not specify what forms of risk are subject to disclosure, leading to firms' omissions of substantial risks posed by algorithms."
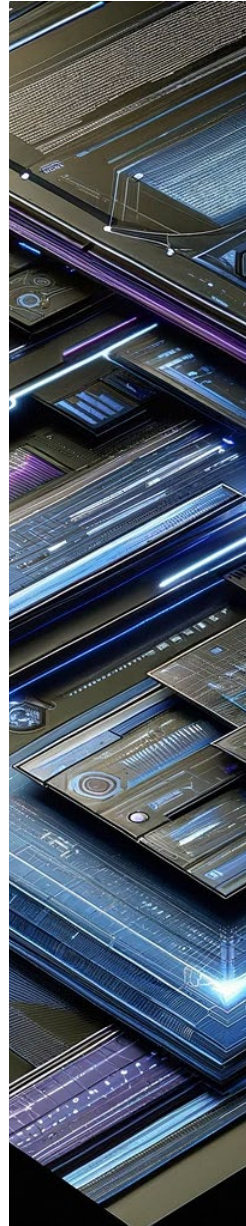
Results

Over half (64.6%) of Fortune 500 companies mention AI in their most recent annual report. Over one in five enterprises specifically reference generative AI.

AI in 10-Ks by Type, Year

Legend: 2022 (magenta), 2024 (dark blue)

- Companies Mentioning AI: Overall — 2022: 128, 2024: 323
- Companies Citing AI as Risk Factor — 2022: 49, 2024: 281
- Companies Mentioning Generative AI — 2024: 108

Over two-thirds (69.4%) of companies mentioning generative AI do so in the context of risk of disclosures, whether that risk is through the use of the emerging technology or as an external competitive or security threat to the business.

Generative AI: Types of Mentions

- Risk Factors Only: 75
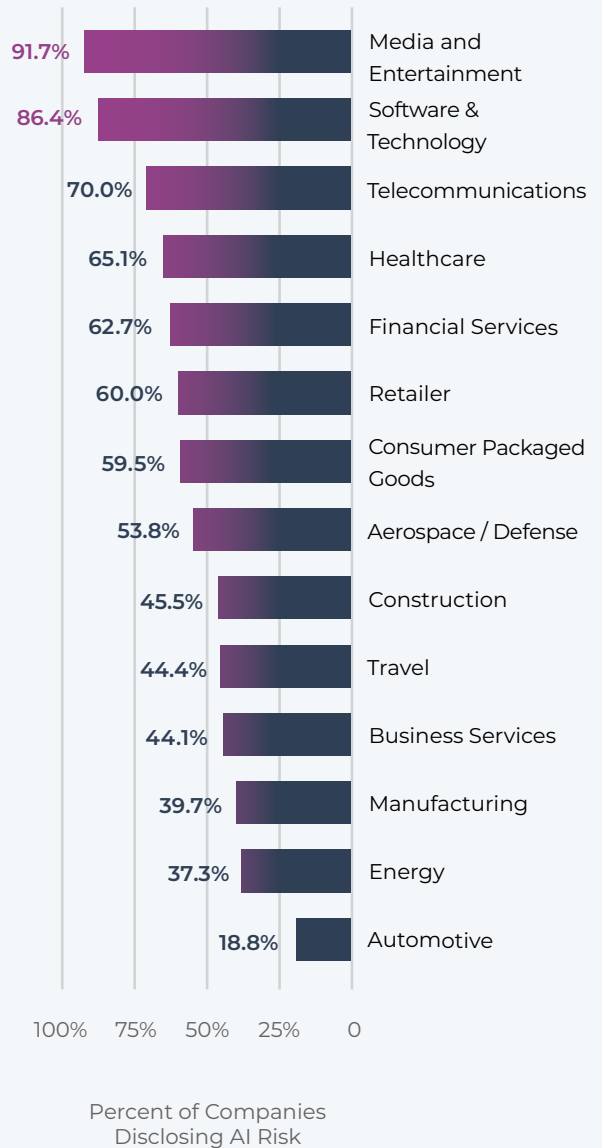- Risk & Benefits: 24
- Benefits Only: 9
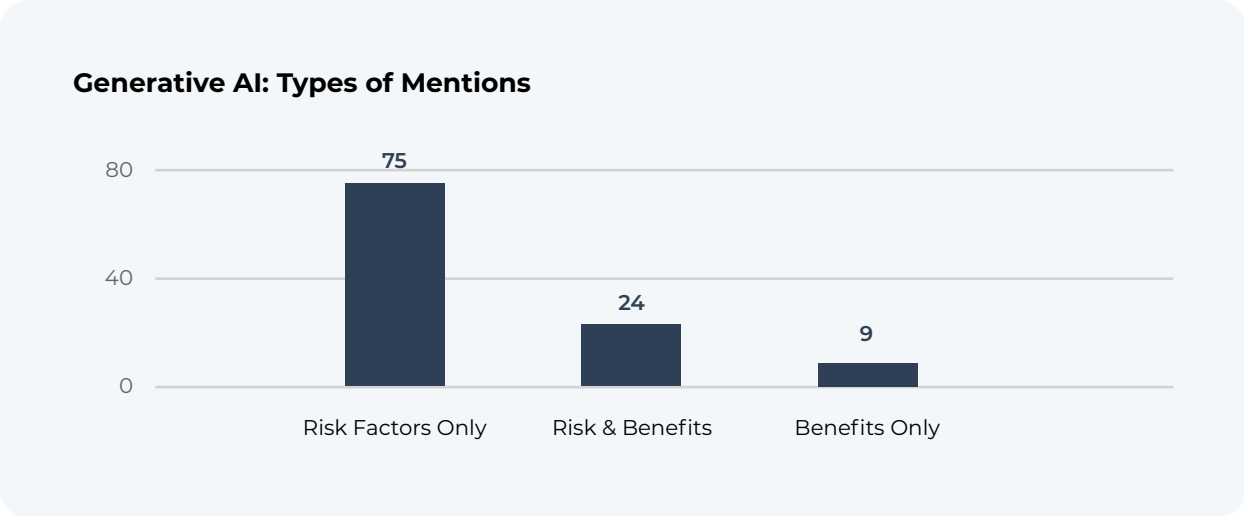
Perhaps unsurprisingly, software and technology companies lead all other categories in terms of raw number of mentions of generative AI and large language models.

Generative AI: Total Mentions by Industry

Industry	Mentions
Software & Tech	152
Financial Services	121
Media and Entertainment	27
Healthcare	21
Retailer	17
Travel	11
Consumer Packaged Goods	10
Energy	8
Business Services	7
Manufacturing	4

Mentions of Generative AI

AI Risk Disclosure by Industry

Industry	Percent
Media and Entertainment	91.7%
Software & Technology	86.4%
Telecommunications	70.0%
Healthcare	65.1%
Financial Services	62.7%
Retailer	60.0%
Consumer Packaged Goods	59.5%
Aerospace / Defense	53.8%
Construction	45.5%
Travel	44.4%
Business Services	44.1%
Manufacturing	39.7%
Energy	37.3%
Automotive	18.8%

Percent of Companies Disclosing AI Risk

91.7% of advertising, media, and entertainment companies cite AI as a risk factor to their businesses – more than any other industry.

Examples

Generative AI: Risk Factors

The reasons generative AI is cited as a risk factor generally fall into four categories, though they often overlap and are rarely standardized in their wording.

Category of AI Risk: Competitive Risks

Broad Definition:

Failing to keep pace with competitors or achieve AI goals

NETFLIX

Source ⬈

"New technological developments, including the development and use of generative artificial intelligence, are rapidly evolving. If our competitors gain an advantage by using such technologies, our ability to compete effectively and our results of operations could be adversely impacted."

REALOGY

Source ⬈

"Our future success depends, in part, on our ability to develop products and services that anticipate and respond effectively to the threat and opportunity presented by developments in technology, including technologies based on AI, machine learning, generative AI and large language models. If we are unable to effectively utilize these technologies in our products and services, it could adversely affect our value proposition to affiliated agents and franchisees, the productivity of independent sales agents, our appeal to consumers, or our ability to capture increased economics associated with homesale transactions, which in turn could adversely affect our competitive position, business, financial condition and results of operations."

S&P Global

Source ⬈

"In recent years, more public sources of free or relatively inexpensive information have become available, particularly through the Internet, and advances in public cloud computing and open source software is expected to continue. Moreover, generative artificial intelligence ("AI") may be used in a way that significantly increases access to publicly available free or relatively inexpensive information. Public sources of free or relatively inexpensive information can reduce demand for our products and services."

Category of AI Risk: General Harms

Broad Definition:

Physical, reputational, or other harms to company or its stakeholders from AI -- often touching on AI fairness or responsible use of AI

Source ↗

"As we increasingly build AI, including generative AI, into our offerings, we may enable or offer solutions that draw controversy due to their actual or perceived impact on social and ethical issues resulting from the use of new and evolving AI in such offerings. AI may not always operate as intended and datasets may be insufficient or contain illegal, biased, harmful or offensive information, which could negatively impact our results of operations, business reputation or customers' acceptance of our AI offerings. Although we work to responsibly meet our customers' needs for products and services that use AI, including through AI governance programs and internal technology oversight committees, we may still suffer reputational or competitive damage as a result of any inconsistencies in the application of the technology or ethical concerns, both of which may generate negative publicity.."

Source ↗

"We are increasingly building AI into many of our offerings, including generative AI. As with many innovations, AI and our Customer 360 platform present additional risks and challenges that could affect their adoption and therefore our business. For example, the development of AI and Customer 360, the latter of which provides information regarding our customers' customers, presents emerging ethical issues. If we enable or offer solutions that draw controversy due to their perceived or actual impact on human rights, privacy, employment, or in other social contexts, we may experience new or enhanced governmental or regulatory scrutiny, brand or reputational harm, competitive harm or legal liability...Uncertainty around new and emerging AI applications such as generative AI content creation will require additional investment in the licensing or development of proprietary datasets, machine learning models and systems to test for accuracy, bias and other variables, which are often complex, may be costly and could impact our profit margin."

Source

"Further, we intend to use artificial intelligence (AI)-driven efficiencies in our network design, software development and customer support services. The models used in those products, particularly generative AI models, may produce output or take action that is incorrect, release private or confidential information, reflect biases included in the data on which they are trained, infringe on the intellectual property rights of others, or be otherwise harmful. Any of these risks could expose us to liability or adverse legal or regulatory consequences and harm our reputation and the public perception of our business or the effectiveness of our security measures."

Category of AI Risk: Regulatory Risk

Broad Definition:

Regulation of AI upending data pipelines or business lines relying on ML models

Source

"Changes in technology, in consumer consumption patterns and in how entertainment products are created affect demand for our entertainment products, the revenue we can generate from these products and the cost of producing or distributing these products. Rules governing new technological developments, such as developments in generative artificial intelligence (AI), remain unsettled, and these developments may affect aspects of our existing business model, including revenue streams for the use of our IP and how we create our entertainment products."

Source

"We have implemented a governance framework that includes policies and processes to address the use of AI technologies,primarily focused on generative AI, by our employees and third-party service providers. Nevertheless, our employees and third-party service providers may not follow our governance framework, including if such providers incorporate AI technologies into their products or systems without disclosing this use to us. This may create risks in our ability to address existing or rapidly developing regulatory or industry standards related to AI technologies."

"We are actively investing in generative AI tools. While our internal generative AI tool, LenAI, was designed to meet our standards for data security and to address and mitigate the risks associated with this new technology, our use of generative AI in certain products and services may present risks and challenges that remain uncertain due to the relative novelty of this technology. These risks may include enhanced governmental or regulatory scrutiny, litigation or ethical concerns. While we are implementing certain mitigation measures and governance to the proliferation of AI tools, these measures may be inadequate or may not meet a growing number of legal and regulatory requirements related to AI."

Category of AI Risk: Security risks

Broad Definition:

Data leakage or heightened cybersecurity risks

"Risks relating to inappropriate disclosure of sensitive information or inaccurate information appearing in the public domain may also apply from our employees engaging with and use of new artificial intelligence tools, such as ChatGPT."

"AI-based solutions, including generative AI, are increasingly being used in the pharmaceutical industry, including by us, and we expect to use other systems and tools that incorporate AI-based technologies in the future. The use of AI solutions by our employees or third parties on which we rely could lead to the public disclosure of confidential information (including personal data or proprietary information) in contravention of our internal policies, data protection or other applicable laws, or contractual requirements. The misuse of AI solutions could also result in unauthorized access and use of personal data of our employees, clinical trial participants, collaborators, or other third parties."

Generative AI: Other Highlights

Of course, not all companies limit discussion of generative AI in annual financial reports to risk. 32 tout benefits, research projects, or broader industry implications from generative AI adoption.

Source ↗

"In recent years, we have taken several major strategic steps to position our agencies as leaders in the global advertising and communications market...Analytics teams, as well as modeling and decisioning tools, are core to all these strategic efforts. These are also areas where we continue to make investments in artificial intelligence. Combined with the latest advances in generative AI, we are now adding intelligence to the creation of content across the marketing spectrum. Together, these steps have built a culture of strategic creativity and high performance for marketers across IPG. We believe in the continued competitiveness of our offerings, the value of our long-term strategy, and the strength of our culture."

Source ↗

"In 2023, we created an initiative to deploy generative AI to improve several areas of our business, including software engineering, customer service, claims analysis, scheduling optimization, specimen processing and marketing. We expect to further develop these projects in 2024...We seek to align our practices with the NIST AI Risk Management Framework (AI RMF) and strategically partner with external AI experts as needed to ensure we remain informed about the latest technological advancements in the industry. Over time, we believe generative AI will help us innovate and grow in a responsible manner while also enhancing customer and employee experiences and bring cost efficiencies. We intend to continue to be at the forefront of the innovative, responsible and secure use of AI, including generative AI, in diagnostic information solutions."

Source ↗

"The Cigna Group continued to accelerate the pace of development and innovation through our new AI Center of Enablement ("COE"). Our AI COE focuses on Generative AI ("Gen AI"), and assesses and governs guardrails, systemic controls, and processes to provide oversight to ensure the responsible use of Gen AI practices. These commitments are intended to ensure our Gen AI capabilities and solutions are ethical, defensible, and in compliance with health care privacy and security requirements. With these strict practices and protocols in place, we anticipate rapidly adapting and capitalizing on new opportunities in an increasingly competitive and fast-changing digital landscape. Exploring and implementing new and emerging technology opportunities enables us to improve efficiency via automation, reduce costs and enhance overall decision-making, all while providing real-time, personalized and connected experiences for our customers, patients, clients and provider partners."

Historical Context

How does the recent surge in AI mentions in annual financial reports compare to prior digital waves?

One interesting comparison lies in cybersecurity. The Atlantic magazine dubbed 2011 "The Year of the Hack," as large enterprises – Citi, Google, Lockheed Martin, Sony, and others – all reported major data breaches.
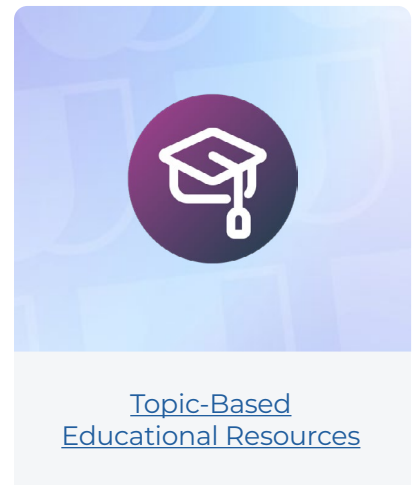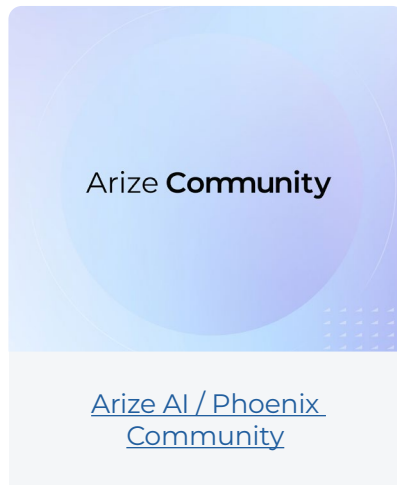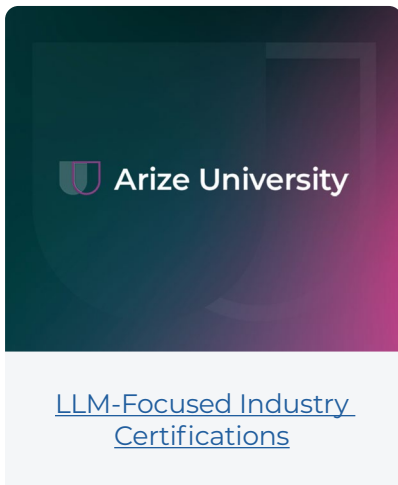
Looking at the subsequent annual financial reports filed in 2012 reveals a surge in companies disclosing cyber and information security as a risk factor. However, the jump in those disclosures – 86.9% between 2010 and 2012 – is easily dwarfed by the 473.5% increase in companies citing AI as a risk factor between 2022 and 2024.

	2010	2012
Companies mentioning cybersecurity / infosec as risk factor	176	329
Companies mentioning IT systems or cloud as risk factor	217	306
Companies citing third-party or outsourced IT/cloud as risk factor	76	117
Companies mentioning cloud or specific vendors (GCS, Amazon, Azure)	9	21
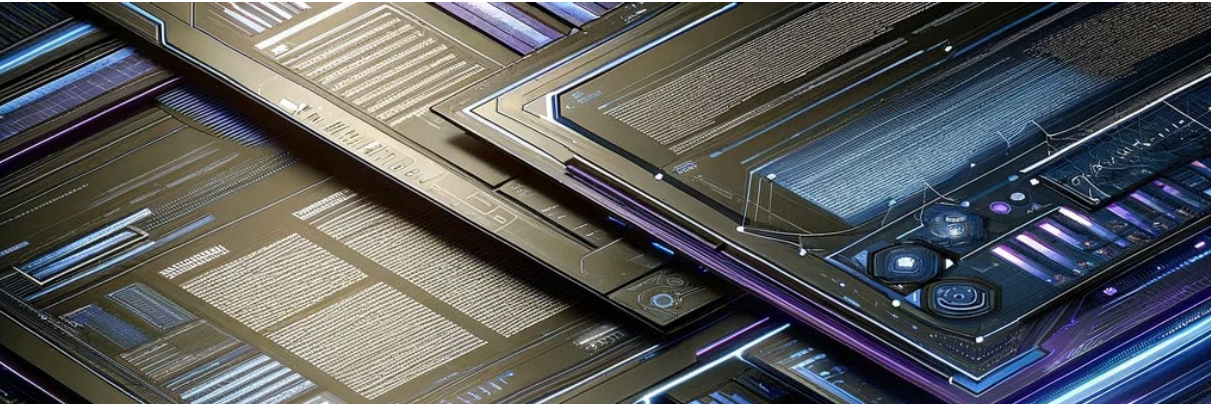
Conclusion

If annual reports of the Fortune 500 make one thing clear, it's that the impact of generative AI is being felt across a wide array of industries – even those not yet embracing the technology. Given that most mentions of AI are as a risk factor, there is a real opportunity for enterprises to stand out by highlighting their innovation and providing context on how they are using generative AI.

[LLM-Focused Industry Certifications](#)

[Arize AI / Phoenix Community](#)

[Topic-Based Educational Resources](#)

To start your LLM observability journey, **[sign up for a free account](#)** or **[schedule a demo.](#)**

To receive more educational content, **[Sign up](#)** for our bi-monthly newsletter "The Evaluator."