



UMENORE

Reliable Intelligence Delivered

Accelerating Development through Uncovering The Emerging Data Analytics Trends for 2024

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Introduction

Quantum computing, artificial intelligence, augmented reality, and machine learning—what's the one common thread that binds all these trendsetting technologies of tomorrow? It's the increasing prominence of data.

Data they generate, and data they feed upon.

But without expert interpretation, that data in its raw form has little value.

A study by McKinsey & Company suggests that businesses utilizing data-driven insights have a 23X higher likelihood of acquiring customers, are 6X more likely to retain them, and 19X more likely to achieve profitability.

That explains why data analytics has gone from being mere numbers in Excel sheets to becoming the driving force behind

decision-making in just about every single industry.

As 2024 marks the onset of the defining decade of data analytics, the gap between analytics leaders and laggards has widened like never before. Behind all the glitter and glamour is the perpetual looming threat of making uninformed organizational decisions and prioritizing the wrong use cases.

In this sense, mastering the skill of resource optimization is crucial, particularly when it comes to deploying technologies like machine learning (ML) and artificial intelligence (AI).

So, as you craft your 2024 plans and budgets for data analytics, this eBook gleans through some of the top trends, predictions, pitfalls, and resolutions to keep you ahead of your competitors.

Why is data analytics imperative for businesses?

On a rudimentary level, data analytics traces its roots to the 1950s, when individual companies collected offline data and manually analyzed it to find ways for operational improvements.

But it was in the 2000s when big data initiatives started to find its footing—alongside computers and connectivity.

Fast forward to 2023—fueled by the data explosion and the dire need for data literacy, visionary tech giants like Amazon, Google, and Microsoft are investing billions into developing advanced analytics platforms—cementing their position as business leaders in this space.

As we look to the future, one prediction stands out: the abundance of data will persist, and we will continue grappling with the fundamental question of what are we using it for?

Data analytics and expertise are no longer just 'good to have' but are of existential importance.

Top three data analytics trends that dominated 2023

The global business analytics and big data market size was worth \$198.08 billion in 2020 and is poised to reach [\\$684.12 billion by 2030](#). So, what are the top trends that contributed to these numbers? Let's take a look.

Generative AI

Generative AI (GenAI) took the crown for the most dominant analytics trend in 2023. While there are plenty of theories about how generative AI can revolutionize analytics—very few tools have made it to the market.

[Gartner now forecasts](#) two trajectories for the generative AI movement:

- Innovations that will fuel advances in GenAI.
- Innovations that GenAI will fuel.

But how can businesses benefit from Generative AI? Here are some prime examples:

Faster R&D Cycles: In the Biopharma sector, GenAI can generate data on millions of candidate molecules for a specific disease, test their application and more—significantly speeding up the analytics process.

Finance: Personalized investment recommendations, test market data, and analyze different cases to propose new trading **strategies**.

Marketing Campaigns: GenAI can deliver personalized experiences, product recommendations and processes.

While the GenAI trend has just caught up—it's moving fast.



Artificial intelligence and machine learning integration

2023 also witnessed businesses integrating AI and ML capabilities into their data analytics operations to add a layer of automation to sift through vast volumes of data, detect patterns, and predict outcomes.

Take [Amazon's "regionalization" efforts](#) as a use case, where they ship products to consumers from their closest warehouse instead of one on the other side of the country. To achieve this, they leverage ML to analyze order data and patterns to predict specific product demands and demand locations. Then, using AI capabilities, they decide the product delivery timelines.

Similarly, the integration of AI and ML can be leveraged in:



Healthcare Sector

Diagnosis and Therapy: AI assists with medical imaging analysis, diagnosis, and tailored treatment plans for improved results.

Drug Discovery: ML expedites drug discovery by assessing biological data and forecasting potential drug candidates.



Finance Sector

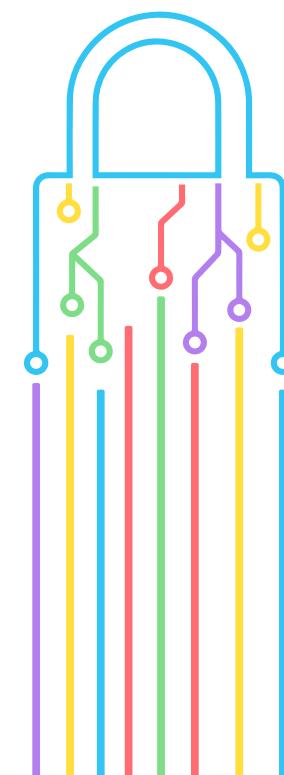
Detecting Fraud: By identifying abnormal patterns, AI algorithms can enable early detection of fraudulent activities.

Assessing Risk: ML evaluates credit risks and offers insights for more informed investment and lending decisions.

Data governance & security

Any conversation around data analytics trends seems incomplete without mentions of the need for data privacy, governance, and security. Just like climate change, the discussions around these topics continue to soar.

It's becoming increasingly imperative for businesses to implement all the data security measures, and adopt ethical measures for data collection, along with robust data governance and security procedures.



Top five data analytics trends for 2024

Let's unravel the data analytics trends for 2024 and understand how by staying up to date with these trends can help your business harness the power and potential of data analytics.

1 Evolving role of AI and ML

With the likes of Google (\$30.7 billion), Facebook (\$22.1 billion), and Amazon (\$10 billion) pouring in massive funding to build their AI and ML muscle, the momentum is only expected to gain more momentum in 2024. These techs will become more scalable as organizations will expect more from their AI-based systems.

According to research by Goldman Sachs, breakthroughs in generative artificial intelligence are expected to drive a 7% increase in global GDP and push productivity growth by 1.5% over the next ten years.

AI and ML will continue to empower IT knowledge management systems to optimize and automate content creation and curation. Additionally, they will also improve search capabilities and provide advanced analytics for knowledge workers.

2 Gen AI-powered analytics

Google's recent [\\$2 billion investment](#) into the OpenAI rival is a strong indicator of how GenAI will continue to be all the rage amongst the big data powerhouses.

Some of the biggest GenAI vendors are already integrating their models with existing data analytics solutions, while many GenAI start-ups are working on unique, standalone solutions for data management and analytics.

Currently, the financial sector is leveraging GenAI to combat fraud and error by utilizing machine learning models trained on historical data points from prior transactions. Similarly, the insurance sector uses GenAI to automate simpler operations like claims processing.

With enhanced natural language understanding and improved data synthesis, GenAI-powered analytics will continue to help businesses improve their operational efficiency and minimise the need for human analysts to assess and interpret large amounts of data manually.



3 Predictive Modelling

Predictive modelling is also emerging as one of the most significant contributions of AI and ML to data analytics. It enables ML models to learn from historical data to make future assessments, such as sales forecasting, identifying irregularities in financial transactions, or anticipating malfunctions in manufacturing.

There are multiple other avenues where predictive modelling will be leveraged.

- **Finance:** Credit Scoring
- **Sales:** Churn prediction and customer retention
- **Healthcare:** Disease Outbreak Prediction
- **Retail:** Demand forecasting
- **Sports:** Player Performance Analysis
- **Supply chain optimization**

And much more.

4 Natural Language Processing (NLP)

Natural language processing will continue to play a vital role in the interaction between human languages and computers. In the realm of data analytics, NLP aids in finding, assessing, and processing vast amounts of data orienting from natural language.

Advancements in fields like speech recognition, automated machine translation, sentiment analysis, chatbots, and the burning need for understanding and processing unstructured data received by humans will lead to greater demand for NLP in the global data analytics market.

In addition to surging demand, NLP is also witnessing significant investments from startups and established corporations alike. Microsoft, for example, made a 1 billion USD investment in OpenAI, a renowned AI research organization focusing on advanced NLP and language-based activities, in 2020.

5 Ethical AI

As the use cases for AI grow, so does the concern around purposefully or unintentionally utilising AI unethically. A concern that will be listed alongside the upcoming data analytics trends in the coming years.

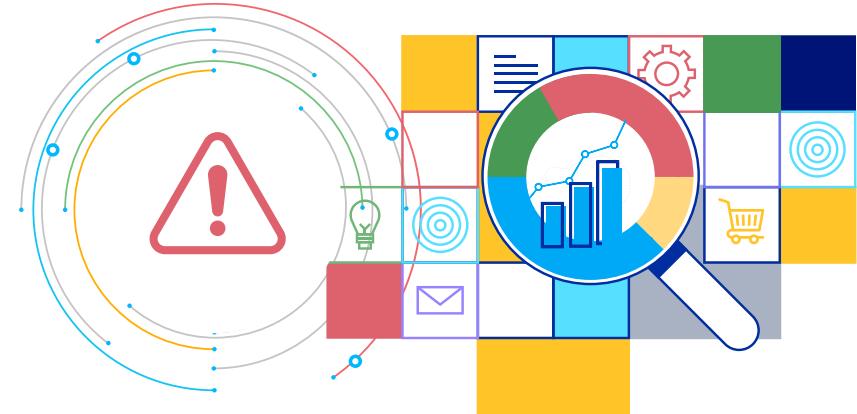
At the forefront of this discussion around ethical AI are questions about accountability, transparency, and how is AI expected to interact with human societal norms. This is important to avoid pitfalls that befell other inventions and a clear understanding of the limits of AI.

For instance, if AI fails to gather data that precisely reflects the diversity of the population—it could be prone to biased decisions. Consider the instance in 2018, when [Amazon's AI recruiting tool](#) devalued resumes containing terms associated with "women".



Challenges and pitfalls

According to Statista, the global data volume hit 90 zettabytes in 2022 and is expected to double by 2025. Such a hefty influx of data is often coupled with complications and poses multiple risks. Let's look at the top five challenges and pitfalls that the data analytics industry will face in the upcoming years:



Poor data integration

Stitching together heterogeneous, incomplete or incompatible data from different sources, formats, and systems is difficult and time-consuming for even the most experienced data analytics teams.

This can be overcome by using data integration techniques and tools such as data mapping, data lineage, ETL (extract, transform, load), and data warehousing.

Additionally, data protocols, standards, and governance should be established to ensure quality and consistency.

1 Sub-par user adoption

According to IDC, almost 28% of all AI and ML initiatives fail, and poor stakeholders' buy-in is among the top reasons for this. Widespread adoption is the backbone of any data initiative, lacking which the program will always struggle to achieve its full potential.

The focus must not be limited to finding the right data strategy but also the right technologies to deliver it.

2 Substandard data

Data quality — or the lack thereof — can cause issues like inaccurate decisions and predictions, wasted resources, biases, and oftentimes even legal consequences.

Substandard data means that the data is inconsistent, inaccurate, irrelevant, incomplete, or outdated for the AI model.

Some common data-quality issues include missing data points, incomplete data mappings or dictionaries, insufficient understanding of existing sources, incompatible systems, and architectural limitations.

3 High cost

A [custom enterprise-grade data analytics solution](#) costs somewhere in the ballpark of \$150,000-200,000 to build and implement.

Businesses that opt for SaaS-based data analytics products pay almost \$10,000-25,000/ year in vendor and maintenance fees.

The high cost of data analytics can somewhat be controlled by defining clear data objectives, developing a data management strategy, selecting primary use cases, and gradually scaling your analytics efforts while gathering stakeholder feedback.

4 Data Governance

People are more aware and conscious of how their confidential data is being collected and used than they have ever been before, so businesses leveraging customer-facing AI must hold themselves accountable when deploying applications.

Organizations have to ensure that they possess enough visibility and control over how their AI algorithms use data at all stages. While segmentation minimizes the impact of a breach, visibility into data collection policies can also help alleviate concerns related to AI.

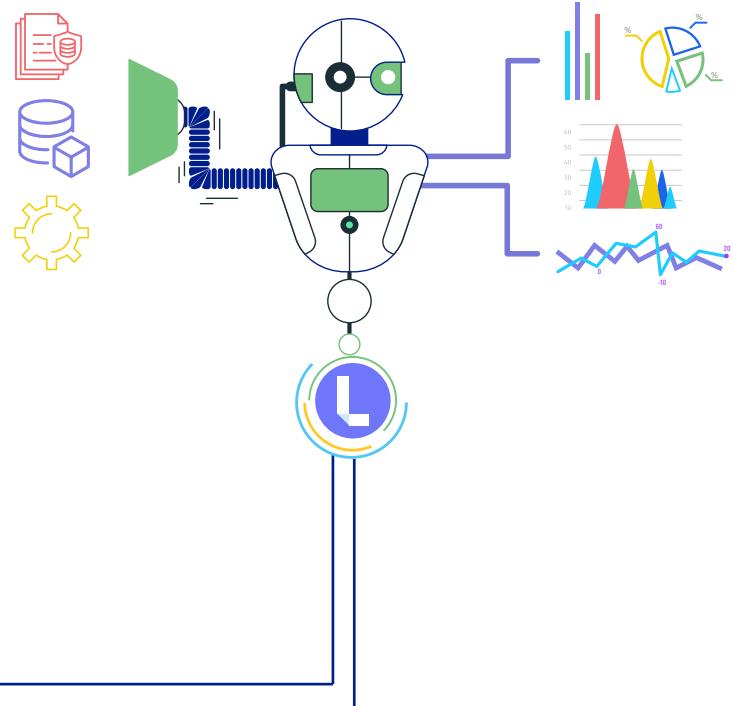
The Lumenore Advantage

Lumenore is a powerful BI and data analytics platform that helps businesses turn data into actionable and reliable insights. With a pool of machine learning algorithms blended with Visualization, Lumenore creates easy-to-consume and compelling actionable insight discovery for end users.

With GenAI and Natural Language Querying (NLQ), Lumenore crafts automated insights for simplified data understanding. The fusion of interactive visualizations with coherent narratives transforms complex data into actionable wisdom for decision-makers.

So, how does Lumenore align with these upcoming trends?

Lumenore packs multiple arrows in its quiver. Its AI capabilities enable businesses to identify trends, outliers, and correlations within datasets, enhancing predictive intelligence. Some of the top capabilities include:



AI-Automated Auto Dashboard creation

Automated dashboard creation using Lumenore smart engine powered by GenAI. It assists users by auto-generating KPIs, and dashboard layout based on their data.

GenAI-powered Narrative Insights

Provides clear and concise explanations of data visualizations, enabling users to quickly understand and interpret key metrics and trends.

Performance optimization with integrated AI

Lumenore uses AI to optimize query performance and parallel processing.

Data analysis assistance with AI capabilities and interactive UI

Lumenore AI capabilities help guide users through the data analysis process and recommend the best charts and visualizations based on the data and the user's context.

AI-powered NLQ based search module

Lumenore AI-powered search feature allows users to ask questions about their data in natural language. The platform uses NLP algorithms to understand the context and intent and retrieves relevant insights from the underlying data sources.

Conclusion

Unlocking the power of data is no easy feat. More so when the tech landscape advancing faster than a speeding bullet. Gone are the days when simply collecting and organizing data was enough. Data analysts today are responsible for creating captivating data-driven visualizations and roadmaps.

It is important to ensure that you can scale up your data initiatives. But it's hard to do so without the right tools and expertise by your side.

With the ability to connect with 50+ data sources, Lumenore helps you build a single, reliable source of truth that delivers actionable business intelligence anyone in the organization can use.

But don't just take our word for it - decide for yourself.

[Try Lumenore for free >](#)

Want to learn more about our platform?

[Explore it here >](#)

Prefer speaking with an expert?

[Feel free to get in touch here >](#)



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Lumenore is an AI-enabled business intelligence and analytics platform that helps businesses turn their data into actionable insights. With a fusion of generative AI-driven automated analytics, natural language querying, data storytelling through narrative insights and robust BI, it intelligently deciphers data sets and crafts automated insights. Industry-specific solutions seamlessly woven into a cohesive data ecosystem facilitate advanced insight discovery, modern business storytelling, and effective decision-making across all business functions.