How Is AI Used in Retail Analytics?

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With every customer purchase, inventory restock, and supply chain movement, retailers leverage data analytics to make informed, smart decisions about their customers and drive positive business outcomes. Data shows that the adoption and integration of artificial intelligence (AI) in retail analytics is growing:

- According to an Nvidia survey, 89 percent of retail organizations are using or testing AI projects (up from 82 percent in 2023), and 87 percent report AI has

boosted their annual revenue.
- According to SAP Emarsys, 92 percent of retail marketers in 2025 used AI, and over half plan to increase their investment to boost their level of customer engagement, according to SAP Emarsys.

These trends highlight the growing value of expertise in the use of AI in retail analytics, and why it is central to the retail industry's future. For those preparing for a career in analytics, a Master of Business Analytics and AI program helps equip students with the advanced analytical, technological, and strategic skills they need to solve complex business challenges across retail and other industries.

AI in Retail Uses

AI helps retailers understand their customers' preferences so the retailers can create personalized shopping experiences for them. The use of AI in retail analytics can also improve operations, as the real-time insights and forecasts provided allow retailers to make informed decisions on warehousing, customer service, and reducing losses.

Here are some of the top ways AI is reshaping retail:

Hyper-Personalization

Hyper-personalization makes each customer's shopping experience more individualized. Powered by AI, hyper-personalization goes beyond merely making basic suggestions like "customers who bought this also bought [some other product]," as is done with typical personalization programs.

Instead, hyper-personalization draws on data about individual customers' preferences and shopping behaviors to deliver recommendations to them that feel relevant and timely. The unique shopping experiences created as a result can create opportunities for increased sales and long-term customer loyalty.

Warehousing

Effectively managed warehousing procedures help speed up deliveries, manage costs, and improve inventory management. This results in quicker service and happier customers. According to McKinsey & Co., using AI tools can increase a

warehouse’s capacity by 7 to 15 percent. They can help find unused space and make better use of resources. For example, one logistics provider was able to boost its capacity by nearly 10 percent with an AI-powered “digital twin” without needing any extra space.

Loss Prevention

Retail theft rates have been rising in recent years: According to Capital One Shopping Research, losses may exceed $53 billion by 2027, up from $45 billion in 2024. However, retail loss prevention can be improved using AI tools.

Since self-checkout became widely adopted by retailers, they have faced issues like barcode tampering and theft. Recently, retailers have begun to explore AI systems for spotting anomalies and predicting fraud. The data suggests more retailers are planning on integrating AI tools into their loss prevention efforts within the next year — 50 percent of retailers, according to *Forbes*.

Customer Service

The quality of a retailer’s customer service impacts how shoppers view the company and whether they want to build a relationship with the company going forward. Generative AI tools can reduce response times to customers’ queries by assisting customer service representatives in real time. McKinsey & Co. estimates that using generative AI in customer service interactions could boost productivity by 30 percent to 45 percent of current costs.

Inventory Management

AI can be used to help retailers keep their shelves stocked and reduce instances of being out of stock or overstocked by automating inventory replenishment. According to SAP, this can cut revenue losses by up to 30 percent and lower inventory costs by as much as 25 percent.

3 Examples of How AI Is Used in Retail

AI in retail analytics provides a forward-looking way to tackle challenges and unlock growth opportunities. Here are three examples of how leading companies apply AI tools in retail to make smarter decisions and measurable results.

1. AI-Curated Homepages

Saks Global, which includes the luxury retailers Saks Fifth Avenue, Neiman Marcus, and Bergdorf Goodman, uses machine learning to personalize homepages on Saks.com. With data from 30 million customers, this has led to a 7 percent increase in revenue per visitor and nearly a 10 percent rise in conversion rates, reports Vogue Business.

2. AI-Powered Store Layouts and Inventory

Home improvement retailer Lowe’s employs AI tools, such as spatial intelligence and digital twins via Nvidia’s 3D Omniverse platform, to monitor its stores’ traffic and customer behavior, according to a Business Insider report. Its ability to adjust store layouts and inventory placement in real-time enables Lowe’s to enhance the in-store experience for its customers.

3. AI-Driven Personalized Experiences

Global e-commerce marketplace Etsy uses AI to create push notifications, emails, and personalized homepages. According to a Retail Dive report, Etsy’s engagement with its customers nearly doubled after the company added personalized homepages. The company also tested generative AI for tailored marketing copy, and this led to increased buyer conversion rates and growth in the number of its active users and app downloads.

Benefits of AI in Retail Analytics

Retail businesses that are using AI to turn data into real results are being transformed. The use of AI in retail analytics allows for smarter decision-making by translating raw data into insights that can be applied to drive measurable sales growth and improved margins. Some of the other main benefits of using AI in retail analytics are:

- AI in retail analytics is being used to improve operations by enhancing customers’ experiences and optimizing merchandising and demand forecasting.
- AI tools such as machine learning and predictive analytics are enabling retailers to boost their efficiency, reduce costs, and deepen their relationships with their

customers.
- Real-time insights acquired through AI are helping businesses streamline their operations and build resilient supply chains.
- AI-powered personalization in customers' experiences is driving loyalty and lowering acquisition costs.

Stand Out in the In-Demand Field of Analytics

The demand for retail analytics professionals who can harness AI tools is growing rapidly alongside the technology.

According to the U.S. Bureau of Labor Statistics, market research analysts had a median annual salary of $76,950 in May 2024, with employment projected to grow 7 percent from 2024 to 2034, much faster than the average for all occupations. Business analysts, who have a similar role and are part of the BLS' management analyst category, had a median annual salary of $101,190 in May 2024. Business analysts are expected to see 9 percent growth from 2024 to 2034.

Tulane University's Master of Business Analytics and AI program is designed to equip students with the tools needed to succeed in emerging retail analytics roles. The program helps students build skills in strategic analysis, risk management, and problem-solving, while providing training in machine learning, predictive and prescriptive analytics, data visualization, and deep learning. Students gain practical experience with tools such as Tableau, SQL, R, and Python.

Explore how Tulane University's Master of Business Analytics program can help you prepare for the retail analytics roles of the future.

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