

Empowering Artificial Intelligence and Smart Shopping Experience in Retail Design

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Abstract—Artificial Intelligence (AI) is pivotal in reshaping the retail industry, delivering engaging shopping experiences. This innovative technology is revolutionizing the retail sector, transforming consumer interactions. AI in retail is changing traditional retail design approaches, offering personalized, efficient, and creative solutions for businesses and consumers. The research focuses on AI transforming the shopping experience. The research aims to study the concepts of intelligent shopping in retail space design. Hence, the research demonstrates the strategies and methodologies of integrating AI and intelligent shopping to enhance customer experience in retail design. Understanding consumers' shopping behaviors using AI improves retail spaces' design and planning process. The research is based on the descriptive analytical approach to studying AI in the development of retail interior design. The significance of the research is that AI helps create interior spaces, plan, organize product displays, and design innovative solutions for spaces. Consequently, the main concern is that AI can control display arrangements to motivate customers to engage and make their journey exciting. Modern visual AI technologies are used in retail design to understand consumers' shopping behavior and develop their needs and capabilities. On the other hand, designers can use AI-powered applications to design retail spaces by generating ideas that help them create innovative concepts. Finally, the research concluded that AI in the retail industry has the potential to transform the traditional retail experience into a creative environment through innovative solutions. Integrating AI in retail is paramount in incorporating technology with consumer behavior. This journey towards AI-powered retail reflects a broader market shift, driven by technological advancements and changing consumer expectations, by employing AI technologies to improve the design of retail layouts for a brilliant, charming, and exciting shopping experience.

Keywords—Artificial Intelligence; Smart Shopping; Retail Design; Customer Experience; Planning Store Design

I. INTRODUCTION

Retail is changing and evolving by incorporating advanced computer technologies to convert traditional stores. Artificial intelligence (AI) could change how consumers shop, as smart shopping has radically altered the shopping experience and transformed the interior spaces of stores. [1] Innovation in retail using digital technologies, such as customer data, artificial intelligence, and virtual reality, can revolutionize how designers interact with customers. [2] Integrating AI into retail is a testament to the industry's resilience and adaptability. AI is a bridge, ensuring a seamless and efficient shopping experience. Designers who embrace this change are future-proofing their businesses and setting new standards for

customer satisfaction. [3] AI has become a powerful tool for changing the future of various industries, including retail. [4] AI has revolutionized the retail sector and will significantly impact the shopper experience within retail spaces. [5] The research explores AI's impact on retail and how it can enhance shopping experiences. AI can anticipate shopper behavior and meet their expectations to enhance the shopping experience, revolutionizing retail operations. [6] The shift towards AI has been driven by the need to meet customers' growing expectations for personalized, seamless, and convenient shopping experiences. [4] The rapid integration of AI across industries has ushered in a new era of innovation and productivity, with retail emerging prominently in terms of innovative potential.



Fig. 1. Illustrates the role of artificial intelligence in retail spaces. [7]

The research applies AI technologies to various aspects of retail space design. [8] The research seeks to determine how AI is used in retail design. [9] Integrating AI into retail is a significant step forward into the future, as technology and consumer experiences are closely linked. AI in retail has evolved from a novel concept to a core business strategy, driving innovation, efficiency, and personalized customer experiences. As designers continue to navigate the dynamic retail landscape, AI is a pivotal tool that shapes how consumers shop. [10] AI in the retail industry can potentially transform the traditional retail experience. [11] Additionally, AI can effectively display merchandise to grab customers' attention and encourage customers to walk down more aisles, exposing them to more merchandise, which is linked to increased sales. [12] AI and AR technologies allow users to try on products virtually before purchasing. [14] [13]

II. ARTIFICIAL INTELLIGENCE IN RETAIL: THE FUTURE OF SHOPPING

A. Research Problem

The ever-evolving retail scene is witnessing a transformative force: artificial intelligence. Designers can create a unique shopping experience for each customer based on their preferences and behavior. Innovative stores designed using AI can be highlighted; designers work to draw a clear vision of customer behavior inside the store to improve the marketing process and enhance customer experience. Therefore, the research focuses on the impact of AI in transforming the shopping experience to become attractive and exciting instead of traditional spaces by integrating AI into planning spaces to reorganize and arrange and integrate them into display units to stimulate shoppers to figure out the space.

B. Research Objectives

The research aims to take the shopping experience to the next level using artificial intelligence. The research presents the concepts of intelligent shopping in commercial space design and the strategies for integrating artificial intelligence and smart shopping to enhance customer experience in retail design.

It creates an enjoyable journey for store visitors to provide smooth shopping experiences, remove barriers, and integrate artificial intelligence tools into the intelligent shopping experience, as well as its impact on raising the efficiency of the shopping experience.

C. Research Importance

The study contributes that AI helps organize store spaces, as long display, clutter, and harsh lighting are terrible times to display products and design innovative solutions for spaces. Controlling consumer behavior and adjustable atmospheres can help shoppers know what their purchases will look like in different environments, and these technologies motivate customers and make their journey exciting.

D. Research Hypotheses

The study assumes that AI improves the shopper's experience, motivates purchases, and facilitates the customer journey in the store. AI also contributes to improving the store layout and enhancing the marketing process. Thanks to the integration of artificial intelligence (AI) into many aspects of the shopping experience, the retail industry is undergoing a radical transformation.

E. Research Limits

The study is limited to the use of Artificial intelligence in retail design. AI can play a crucial role in revolutionizing the retail industry, providing a comprehensive experience for shoppers.

The research explores AI in retail—its uses, benefits, and impacts on space planning, display design, customer movement, and behavior.

F. Research Methodology

The research is based on the descriptive analytical approach to studying artificial intelligence in developing retail interior design and enhancing smart shopping.

Retail is a highly customer-centric industry, and with consumer needs constantly evolving, designers must find ways to gain a competitive edge and deliver a unique experience to shoppers. [5] The retail industry has seen a surge in technological advancements over the past decade. Influenced by the e-commerce revolution, the retail sector has played an active role in adopting and innovating new technologies in the market, with the emergence of new technologies such as the internet of things, mobile, and artificial intelligence. [3] [15]

A. Artificial Intelligence in Retail and Shopping Experiences

AI in retail is changing traditional approaches to retail design, improving planning, customer service, marketing, and inventory management, and offering personalized, efficient, and innovative solutions. [10]

AI technology automates shopping experiences by utilizing facial recognition, computer vision, and robots to identify customers, fulfill orders, provide personalized product recommendations, and track customer behavior, enhancing efficiency and accuracy in design and marketing. [16]

B. AI in Retail

In retail, AI transforms how designers deliver value beyond transactions by creating personalized customer experiences in a seamless shopping journey. [17] AI in design has the potential to create a superior customer experience and offer innovative shopping solutions in interior design elements such as virtual mirrors, fitting rooms, or even cashier-free stores. AI offers versatile possibilities in the evolution of retail design. [18] Integrating artificial intelligence (AI) into the retail sector represents a milestone in the industry's evolution, characterized by an unprecedented combination of technology and consumer behavior in his journey.

This journey towards AI-powered retail reflects a broader market shift driven by technological advancements, changing consumer expectations, and increasing the likelihood of purchasing. [10] AI is ideal for understanding consumer needs and recommending relevant products to customers. Small businesses that use point-of-sale software can integrate AI to grow their business exponentially. [19]

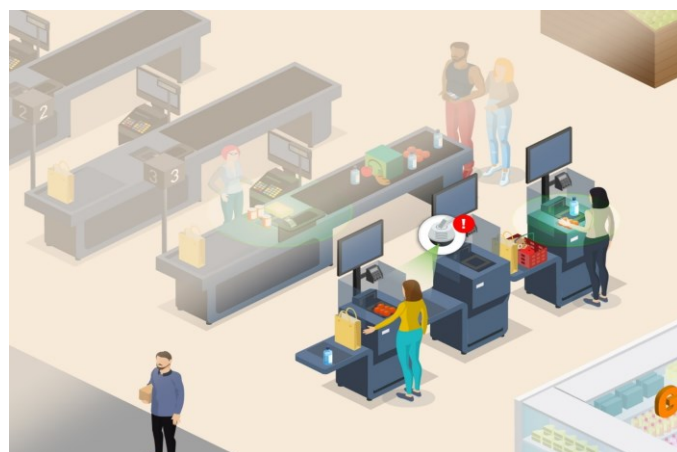


Fig. 2. Illustrates RFID technology in store. [20]

III. RETAIL SPACE PLANNING THROUGH ARTIFICIAL INTELLIGENCE

Current methods in store layout design and modern AI technologies have evolved. Designers can draw and plan an attractive design with the help of AI tools that study the movement of shoppers through the store and move from one area to another, explore internal display areas, and explore the storefront to enhance the store layout design for customer comfort and satisfaction, thus increasing the sales of designers. Therefore, it provides insights into customer behavior within the store to inform and improve the store layout design. [12]

A. Employing AI Technologies to Improve Store Layout

Visual AI and data analysis techniques can be applied to store layout design. AI-powered store layout is an essential strategy in retail design. The concepts of (sense-think-act-learn) (STAL) design framework can be used in retail design. [12]

TABLE I. PLANNING RETAIL DESIGN CONCEPTS

NO.	Stage	Concepts
First	“Sense”	The "Sense" refers to collecting primary data.
Second	“Think”	The "Think" utilizes advanced artificial intelligence.
Third	“Act”	The "Act" stage uses knowledge.
Forth	“Act”	The "Learn" stage uses continuous learning.

^a. (STAL) design framework concepts. [12]

Integrating advanced technology is one of the most effective in-store marketing tactics. The recent development of AI technologies has made store layout design a game-changer. [12]



Fig. 3. Illustrates technology that checks the products on the shelves. [21] [20]



Fig. 4. Illustrates customer movement in-store design through AI tools. [20]



Fig. 5. Illustrates the impressive AI technology used to control retail design and capture consumer behavior in the store. [20]

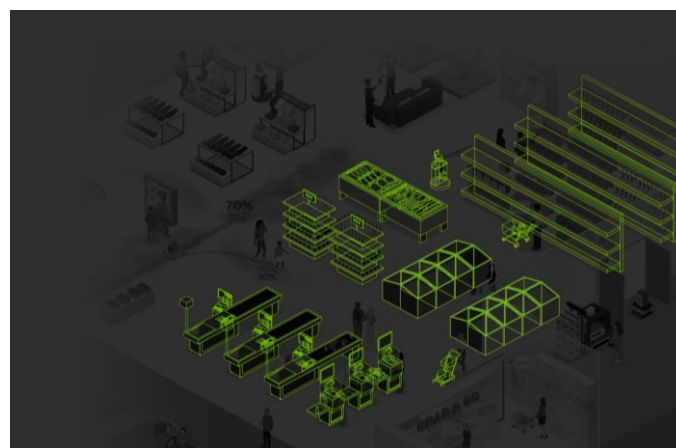


Fig. 6. Illustrates layout design and consumer behavior. [20]

C. Definition of Artificial Intelligence

Artificial intelligence (AI) is the application of computer science to replicate human intelligence and logical thinking in machines, enhancing operational processes and accuracy. [1] [22] AI can revolutionize retail by providing insights, speed, and flexibility, enabling designers to create intuitive, efficient, and customer-centric stores through rapid prototyping and fast modifications. [23]

B. Enhancing display design in physical stores

Generative AI models enable designers to create efficient store layouts and product displays, enhancing customer experience and sales by catering to specific customer segments and utilizing interactive and AR applications. [24]



Fig. 7. Illustrates using artificial intelligence tools in retail design. [17]



Fig. 9. Illustrates smart display with artificial intelligence technology. [5]

B. Transformative Impact of AI and Virtual Reality on the Retail Design

Designers are exploring AI to enhance customer experiences, boosting loyalty and growth by creating unique, exciting shopping experiences. [2]

C. Developing AI-Powered Shopping Apps

Digital transformation is reshaping retail with AI at the forefront. AI-powered shopping apps are revolutionizing shopping experiences. The research explores how AI can be harnessed for application in retail spaces. There is a strong interest in integrating AI into shopping apps. This level of personalization leads to increased customer engagement and satisfaction as shoppers feel like the app understands them. One notable benefit of using AI in shopping apps is improved search functionality.

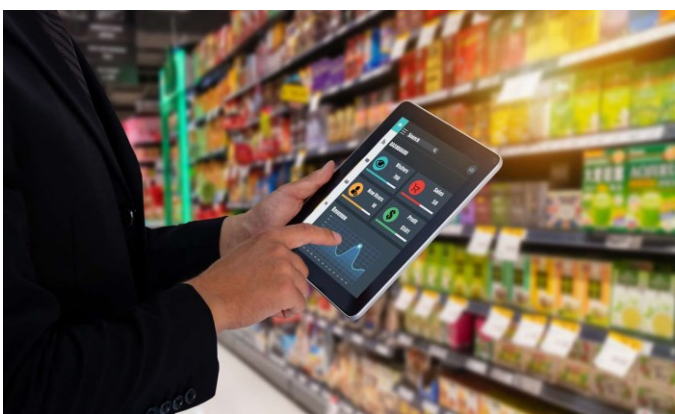


Fig. 8. Illustrates using devices in the shopping experience. [17]

IV. THE ESSENTIAL BENEFITS OF ARTIFICIAL INTELLIGENCE IN THE RETAIL INDUSTRY

Retail stores use artificial intelligence to monitor customer behavior and improve layouts to increase sales. The store layout is essential in improving the shopper experience, and the designer must understand their customers' behaviors and adapt their strategies to improve shopping experiences. [25] [20] [21]

A. In-store sales and changing the traditional shopping experience

Artificial intelligence is set to transform the traditional shopping experience into an exciting and engaging in-store experience for the customer. AI can help increase customer footfall at a retail store. Several approaches and ways of designing, including using AI-powered robots to enrich customers' shopping experiences in retail stores and act as concierges for the store. Consequently, in-store shopping becomes an engaging and enjoyable experience for customers. Such strategies lead to an increase in customer visits and sales. [26] In addition to, AI-powered solutions in the retail sector could increase profitability rates by 59% by 2035. [4] When designers use AI-powered tools to enhance the retail space experience, they can create a unique shopping experience for each customer based on their preferences and behavior. This type of personalization can help increase customer satisfaction. [27]

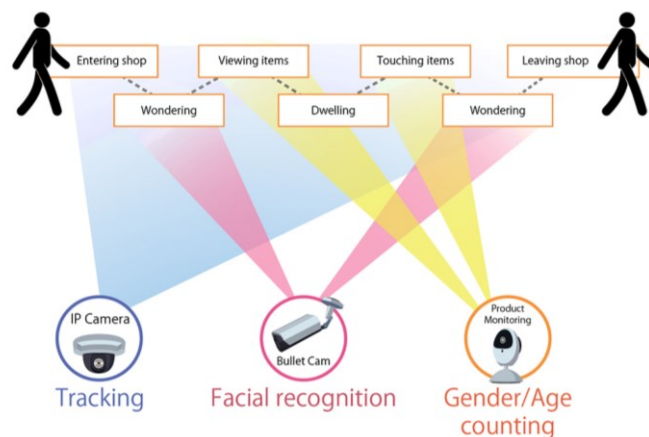


Fig. 10. Illustrates the vital benefits of implementing artificial intelligence in retail. [7]

Modern visual AI technologies are used in retail to analyze customer emotions and shopping behaviors. [12] Advanced natural language processing enables users to ask complex queries or describe the items they seek without relying on specific keywords alone. As a result, customers can find products more efficiently while discovering new options that fit their needs. However, integrating AI with shopping apps greatly benefits consumers and businesses through enhanced personalization capabilities and improved search functionality – ultimately leading to higher levels of customer satisfaction in the rapidly evolving digital retail landscape. [28]

V. ARTIFICIAL INTELLIGENCE AND VIRTUAL REALITY SHOPPING EXPERIENCE

As technology advances and more people engage in e-commerce, the need to improve shopping experiences has increased dramatically. [2]

A. Enhancing Customer Experience

AI is a vast field of study and genuinely impacts retail. Brands are deploying AI to transform the physical shopping experience and the analytics used to make decisions. [7] Enhancing customer experience is critical to success in the competitive retail landscape. Artificial Intelligence (AI) has emerged as a crucial player in revolutionizing how customers interact with brands and products, providing a more personalized, efficient, and engaging shopping experience. [10]

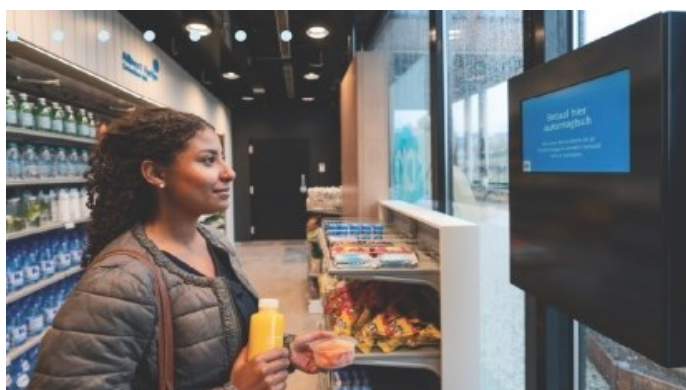


Fig. 11. Illustrates AI that enhances the shopping experience. [7]

B. Increasing customer engagement

Technological advances have created specific customer demands to make purchases faster and more convenient. Contemporary customer demands are reshaping the retail industry. One of the most prominent technologies that has the potential to dramatically enable operational flexibility, reduce costs, enhance supply chain management, and create great customer experiences is artificial intelligence. [18] AI-powered tools like chatbots and virtual assistants allow designers to interact with customers in real time, improving customer satisfaction and loyalty. [4]

New brands leverage gamification, pop-up stores, live streaming, and TV shows to drive customer engagement. [2] Store design incorporating AI transforms physical stores to fit the benefits of e-commerce. It brings AI-inspired trends and social media to life within the physical retail space. [2] Customers use an app that automatically identifies products that have been taken or returned to shelves and displays, while AI will track the items in the customer’s virtual shopping cart. [18]

C. Increasing efficiency

AI streamlines shopping by providing quick product recommendations and menu descriptions. This enables informed decision-making and reduces time spent searching for desired items. [2]

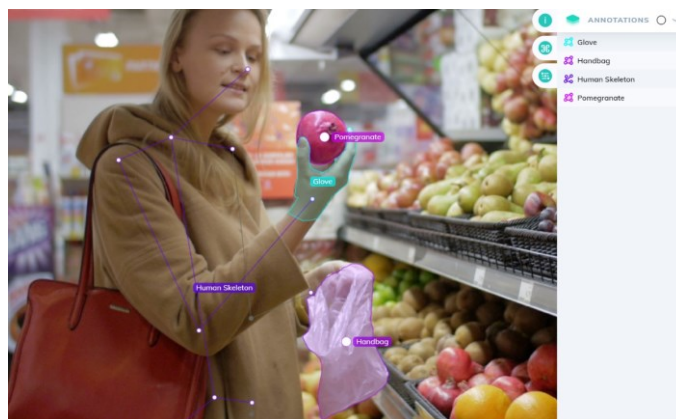


Fig. 12. Illustrates using computer vision to track fast-moving goods and object detection to analyze crowds and count people in a supermarket. [29]

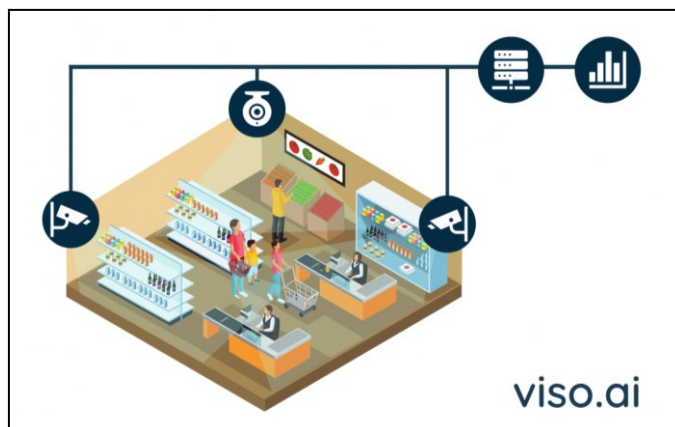


Fig. 13. Illustrates the tools of AI in retail design to follow customer movement in the store and analyze their interest and products that help to collect all information from the clients. [30]

VI. SMART SHOPPING

AI can expedite product selection and checkout, allowing shoppers to focus on more critical tasks while handling customer service tasks like answering inquiries and making recommendations. [2]



Fig. 14. Illustrates using computer vision to track fast-moving goods and object detection to analyze crowds and count people in a supermarket. [29]

A. Creating Smart Stores Using AI

Intelligent store design is an essential element in retail spaces today. It facilitates the shopping process without visitors or long queues at check-out. Digital sensors on the shelves detect when purchases are made, and the money is deducted from the customer’s account when he leaves the store. [26]

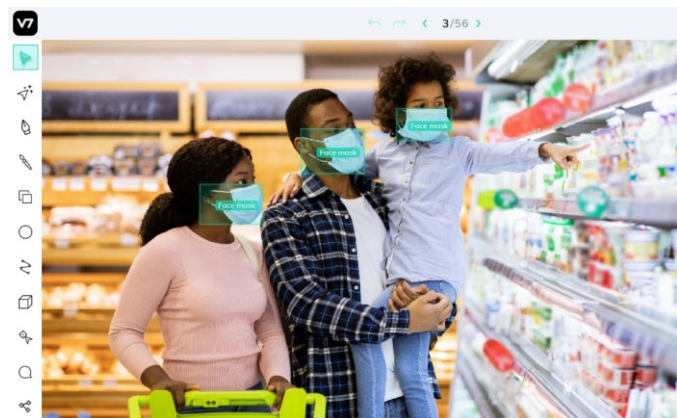


Fig. 15. Illustrates detecting face masks in a supermarket using bounding boxes. [29]

VII. RETAIL INTERIOR DESIGN USING VIRTUAL SOLUTIONS

Virtual solutions utilize virtual reality technology to enable customers to try on clothing, shoes, and accessories virtually. This reduces fitting room time and provides an immersive product experience beyond flat images or mannequins. [2]

A. Designing interactive and shopping experiences

Intelligent stores, equipped with AI-powered tools like interactive displays and automated checkout systems, are gaining popularity for their engaging shopping experience, efficient inventory management, and personalized customer service. [10]

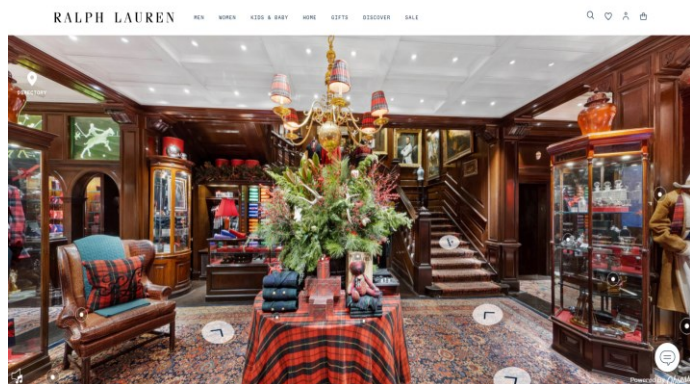


Fig. 16. Illustrates Omnichannel marketing with AI technologies, virtual storefronts, and smart checkout. [2]

B. Virtual Reality (VR) and Augmented Reality (AR)

Combining AI with VR and AR technologies enables innovative in-store experiences, such as virtual try-ons and interactive product displays. [10] [31]



Fig. 17. Illustrates Augmented Reality technology in retail design. [32]

Today, various AI tools support marketing activities in the retail sector. These changes have pushed retailers to adopt data-driven strategies with real-time applications to stay informed in a dynamic market, understand customers better, and discover similarities in customer behaviors. AI solutions should be used to find a solution to a well-defined problem. Incorporating AI systems by training on large datasets hence, retail provides an effective environment for the use and growth of AI. AI is changing the interior design of retail spaces, making them more attractive to customers and more engaging to their needs. [33] AI is revolutionizing retail by enhancing customer experiences, preventing loss, automating inventory management, and enabling demand forecasting. [34]



Fig. 18. Illustrates AI robot in-store design to help customers through their trip. [34]

C. AI-enhanced in-store experiences, Augmented reality

(AR) combined with AI, customers can virtually “try on” products, whether clothing, makeup, or accessories, enhancing the shopping experience. [3] Today’s designers are looking to give shoppers a more personalized and engaging experience, increasingly turning to intelligent retail. These offerings combine traditional shopping with modern innovative technology using data analytics and technologies such as the Internet of Things, artificial intelligence (AI), virtual reality (VR), and augmented reality (AR). [35]



Fig. 19. Illustrates using AR technology in retail design. [6]

According to a study by Marx Labs, Augmented Reality (AR) generated \$120 billion in revenue by 2020. 61% of shoppers preferred designers and retailers offering AR. AR is also considered fun. U.S. internet users desire AR shopping for 60% furniture, 55% clothing, 39% food and beverages, 35% footwear, 25% cosmetics, 25% jewelry, and 22% toys. [32]

D. Artificial Intelligence in IKEA Interior Design

IKEA uses AI to meet customers' needs and enhance their shopping experience. Designers can use AI to understand customer preferences, predict behavior, and offer personalized promotions. [4]



Fig. 20. illustrates IKEA's interior design. AI plays a significant role as the company transitions towards a more digital business model. [36]

IKEA takes a unique approach to designing its stores. [4] One key area where AI is making its mark at IKEA is in the remote interior design channel. [36]

VIII. SMART DISPLAYS IN RETAIL DESIGN

Visual cues significantly influence the shopping experience, and intelligent displays and signage can enhance it. AI-based video analytics can measure the effectiveness of these elements in simplifying the decision-making process. [22]



Fig. 21. Illustrates how Smart displays and signage in retail stores are being implemented to enhance the customer experience. [22]



Fig. 22. Illustrates innovative stores in display design. [35]

A. Virtual Showrooms

Virtual reality can create virtual showrooms, enabling customers to browse and design thousands of products according to their preferences. [2]

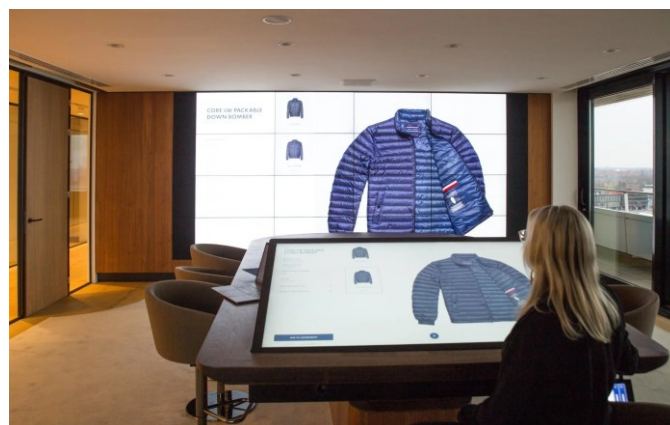


Fig. 23. Illustrates virtual showroom design. [37]

Fashion companies increasingly market their products digitally, using e-commerce, social commerce, and live shopping. The latest advancement is the 'immersive virtual showroom.' [38]



Fig. 24. Illustrates an interactive virtual showroom, shoppable hotspots, and digital planning boards for online shopping, allowing buyers to view assortments, collaborate, and make payments. [37]

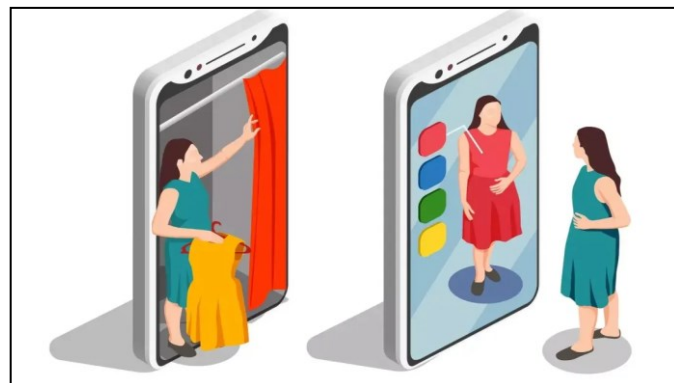


Fig. 27. Illustrates the difference between traditional and virtual fitting rooms. [39]



Fig. 25. Illustrates Diesel's company, OTB. The platform allows brands to have virtual showrooms, allowing retail buyers to experience remote buying sessions with 360-degree displays and 2D closeups. [37]



Fig. 28. Illustrates virtual fitting room design. [6]



Fig. 26. Illustrates virtual fashion showrooms representing different experiences in retail design and brand. [38]

B. Virtual Fitting Rooms

The dynamics of fitting rooms have changed dramatically in the past decade. Virtual fitting rooms save customers time and help them find the perfect product while browsing various options. [6]

Augmented reality dressing rooms in retail attract customers, improve brand image, and reduce return rates, leading to increased sales and revenue. Smartphone apps display live images of selected articles.

C. RFID Technology in Retail Design

(RFID) technology is considered the speed and efficiency of RFID for customers, with average waiting times reduced by 50%. [40]



Fig. 29. Illustrates allowing shoppers to visualize their purchases in various environments. [41]

D. Smart Fitting Rooms in Shopping Spaces

AI helps organize retail spaces and design innovative space solutions. AI suggests adjustable lighting and ambiance controls that the user can change based on their preferences or to simulate different environments such as daylight or a low-light party. AI proposes allowing shoppers to check out their purchases there and then use their smartphones to pay for RFID-tagged clothing through a smart mirror. [41]



Fig. 30. Illustrates ChatGPT's adjustable lighting and ambiance control technology that could revolutionize fitting rooms. [41]

E. Intelligent mirrors in shopping spaces

Stores use AI-powered intelligent mirrors that allow customers to interact, browse clothing items, and get inspired. [42] Fitting rooms combine RFID data with mirror display technology. These smart devices can transform customer experiences by suggesting complementary outfits and alternate sizes based on store availability. [40] [43]

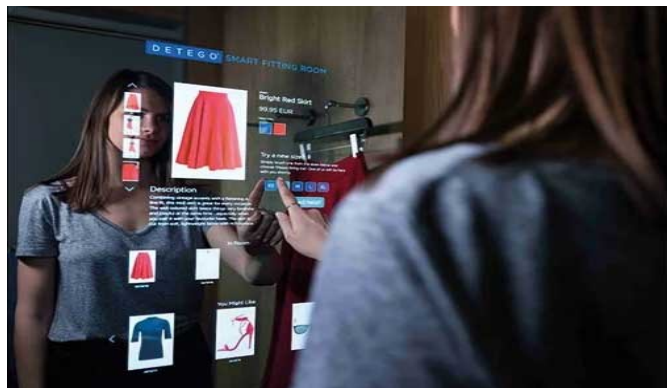


Fig. 31. Illustrates the design of intelligent mirrors in retail design. [43]

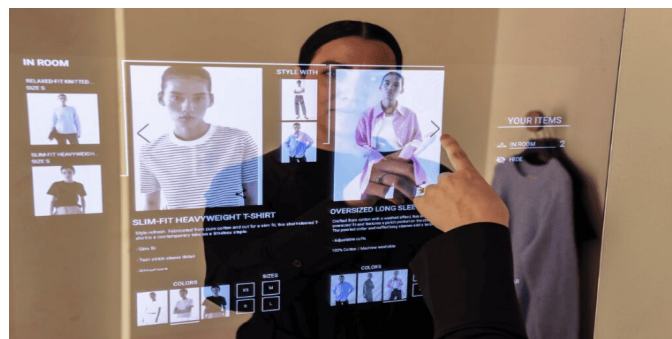


Fig. 32. illustrates that smart mirrors have many digital advantages for digital self-service in smart magazine changing rooms. [40]



Fig. 33. Illustrates mirror features a flat (only 65mm). [43]

F. Virtual storefronts

Designers are recreating physical store spaces, allowing customers to interact with collections, view products in virtual models, and experience fitting rooms and mirrors. [2]



Fig. 34. Illustrates smart and interactive screens in the storefront. [44] [45]



Fig. 35. Illustrates customers and stores using a tablet. [44] [45]

IX. THE FUTURE OF ARTIFICIAL INTELLIGENCE IN SMART STORES

AI has transformed the physical shopper experience and is already changing the future of retail shopping. [44] Convenient, cost-effective, and efficient, AI-powered innovative stores address today’s employment issues and tomorrow’s sustainability challenges. The future of artificial intelligence (AI) in retail envisions an increasingly sophisticated and integrated shopping experience driven by technological advances and changing consumer expectations. [10] Designers can iterate designs quickly based on feedback, reducing time and identifying optimal configurations for customer experience and sales. [34]

A. AI and Visualization

Today, designers can use AI-powered applications to design future retail spaces, such as ChatGPT, which can reimagine some of the most rigorous design challenges in retail, and AI image generator Midjourney for design by generating retail design ideas that help designers create innovative atmospheres. [41]



Fig. 36. Illustrates that AI suggests supermarkets adopt quick-service restaurant models like McDonald's. [41]

AI generates realistic retail space renderings, aiding decision-making and alignment of vision. VR allows for assessing layout and product placement, while AR integrates digital information into the physical environment. [34] Interactive displays allow shoppers to learn more about products or test them before buying. The in-store experience could benefit from more interactivity in games and real-life activities, such as fitness areas where shoppers can feel excited. [41]



Fig. 37. Illustrates revamping their frozen aisle, incorporating floor-to-ceiling cabinets and touch-screen ordering. [41]

B. Application of AI in the Interactive Sports Store

Virtual worlds are essential for the next era of retail design. Designers are exploring how AI can help enhance their stores using digital, simulations, and virtual tools. [20]



Fig. 38. Illustrates interactive screens that can provide customers with product information. [41]

AI experience can improve a customer's emotional connection to a brand. By offering untapped potential for in-store theater and experiential retail, ChatGPT has some ideas for bringing sports and entertainment stores to life.



Fig. 39. illustrates smart displays that customers can use to test before purchasing, while customization stations can enhance their emotional connection to a brand. [41]

AI tools are revolutionizing the design process by enhancing communication and collaboration among architects, designers, and clients. As AI advances, it could be used in retail to

establish fully autonomous stores and create personalized shopping experiences. This could lead to a new era of intelligent, sustainable, and immersive retail environments. [34] AI tools are ideal for extracting and analyzing store data, such as highlighting customer traffic patterns, deep diving into customer behavior, elevating product placement, and analyzing competitor layouts. These tools can help retailers re-engineer store layouts, direct customer movement, and optimize space utilization. AI can also help retailers analyze sales trends, product relationships, and consumer demands, enabling strategic product placement and competitor analysis. By incorporating AI into store design and merchandising, retailers can optimize layouts and increase sales. [23]

X. RESULTS

AI helps organize retail spaces, design innovative space solutions, and map customer journeys, providing insights into different touchpoints where personalization can enhance the shopping experience. An AI-powered bright store can create an interactive and personalized shopping experience in physical stores. The study utilized AI techniques that can be applied in retail space layouts to help organize customer traffic. It uses AI tools to interpret and understand customers and their in-store behavior. AI-powered analytics can be used to gain a better understanding of consumer behavior. Designers can draw and plan an attractive design with the help of AI tools that study the movement of shoppers through the store and move from one area to another, explore internal display areas, and explore the storefront to enhance the store layout design for customer comfort and satisfaction, thus increasing the sales of designers. Finally, Combining AI with VR and AR technologies enables innovative in-store experiences, such as virtual try-ons and interactive product displays.

XI. DISCUSSION AND CONCLUSIONS

Retail has been transforming and changing the everyday shopping experience for years. The research examined the impact of AI on retail design and enhancing customer experience. AI is a set of tools that can perform complex tasks. These tools can help to understand natural language and learn from text, images, videos, and audio. AI is a powerful tool for brands and designers to enhance the design of retail spaces, attract marketers, and integrate AI with the innovative shopping experience. Advanced AI systems can quickly absorb vast amounts of information through sensing, processing, and experimentation, much faster than humans. Providing an enhanced in-store experience with personalized recommendations, offers, and product support based on age, gender, location, and customer behavior is the next big thing in retail. AI is the most sought-after technology among designers to achieve this goal of enhancing the in-store customer experience. The research explored technology adoption while addressing its challenges in retail spaces. The fusion of AI and retail vision offers customers a more personalized and superior shopping experience in intelligent stores. Therefore, it provided insights into customer behavior within the store to inform and improve the store layout design. Finally, the research concluded that AI significantly impacts retail more than all other digital technologies. Consumers can interact in different and creative ways through AI. In addition, AI-based tools help customers navigate stores easily, locate products, and receive

offers and promotions in real-time based on their location within the store. The future of retail through AI technologies motivates designers to explore unique spaces and inspire more futuristic ideas in retail interior design.

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