International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2020): 7.803

Artificial Intelligence and Global Fashion Trends

Rebecca F Dsouza

Ph.D. program, Department of Business Management LIGS University

Abstract: ***Artificial Intelligence (AI)breaks all barriers of convention and disrupting the creative apacein areas like art, music, and fashion design in the Fashion Industry. This research is carried out by a sustainable supply chain that mainly focuses on one of the stages and studies the impact and significance of Artificial Intelligence in the fashion industry. Maybe through the Ecommerce market or the current scenario of digital and technological innovation. With the popular databases "Scopus and WEB of Science" where the first research article is machine language, expert systems, decision support systems, optimization, image recognition, and computer vision, these are based on supply chain stages targeting the Design Process, targeting the Process designing in Fashion management, furthermore, the supply chain stages were classified based Business to Business and Business to Customer to get a broader outlook in the Industry. Now with AI in the fashion industry (2021), this has entrenched 44% of the fashion retailers who do not indulge in AI, are facing bankruptcy. As a global trend AI technologies are expected to reach 7.3 billion each year in the fashion Industry. Visual Merchandising had enabled technologies, augmented reality with virtual reality that is closing the gaps between online and in-store shopping experiences. Shoppers online can access any merchandise through digital media. Now with machine learning algorithms can accurately predict the inventory. This will help in reducing wastage and unsold inventory costs. Research gaps are still to be identified in the applicat***ion of Artificial Intelligence techniques. The supply chain stages form business based on the gaps.

Keywords: Artificial Intelligence, Big data analytics, Design Process, ECO- Systems, Supply chain, Digital Transformation

1. Introduction

Transformation with Artificial Intelligence has made a big wave in the fashion industry. Fashion companies are designing and manufacturing their products as well as marking and shipping their products online to their target client. Fashion is constantly evolving, fashion e-commerce brands operate is constantly evolving too. The Fashion Industry sales growth is changing as new technologies, shifting markets economically and geographically. One of the largest economic giants of the Fashion Industry sales growth to the Asia Pacific, to Europe, and North America, according to Business of Fashion 2019. Fashion &Apparel sales are projected to grow by 75% and 5.5% in the Asia Pacific, Europe respectively for a year. Fashion &Apparel, also one of the largest waste producers globally, because of problems like overproduction and product returns. The principal reason behind this is the consumers' dissatisfaction with the products offered by the Industry in terms of size, color, style, concept, and trends. Hence Industry needs to become customer-centric for successfully regulating environment-friendly manufacturing practices. For e-commerce Covid-19 thrust a decade of growth into a single year.It has overturned the traditional loyalties and given birth to a new wave of direct–to-consumers. The Industry must adopt sustainable production practices to alternate waste production and management. One of the ways of achieving this can be by taking advantage of emerging AI techniques for creating a supply chain (digitally). In the past decades, AI has been recognized in the Fashion Industry at various stages such as Apparel Design, Patternmaking, Garment Construction, Conceptualization, Forecasting Trends, Sales, Production, and Supply Chain management.

Artificial Intelligence in the Process of design thinking. (By Digital Trends) design thinking is a human-centered approach to innovation and creativity that integrates the needs of people, the possibilities of the technology, and the requirements for business success. Starting from scratch, design thinking is an interactive process in which we seek to understand the user or customer which helps to a successful business. AI is set to transform businesses, entire industries, and even our everyday lives as its impact reach the Fashion business in the Industry ready to incorporate machine learning and AI that enables us to learn from data. Predominantly, models that understand image data used in practice are(deep)Neutral Networks, here we will implement a Neural Network image from scratch in Python.

The Fashion Industry is changing, technology is said to be the biggest driver of recent shifts. According to an in-depth report in the Global Fashion Industry, conducted by McKinsey. "The three keywords for 2018 were changed, Digital and Fast (Balchandani, 2018).

Temporary Cultures need speed and convenience, quality newness, and affordability. The need for fast Fashion is slowly changing and people are beginning to change their views about it, bigdata seems to reflect evolving consumer behavior and the strength of social media is dictating demand now for slow and ethical fashion with sustainability.

It is always good to be prepared and have a knowledge of the customer needs by doing a study of what is moving in the market (market research) and know your target market. Know what your customer wants before they do. The design thinking process is typically time-consuming and complicated, given that the environment is constantly changing, brands need to consistently keep up with the most current trends and predict consumer preferences, as they have a much wider source of inspiration compared to 10 years ago. Social media and influences, as well as social and environmental factors, play a more important role in decision-making. This increasingly diverse pool of inspiration means consumers, as opposed to designers, now more often establish trends themselves. In an era of fast-changing preferences the retailer should be able to respond to shifting demand, and tailor design, an almost impossible task for the designer to do as their own. AI is revolutionizing the Fashion Industry.

AI Technology has already a positive impact on the job of designers. However, promising results from machine language in other processes, such as the supply chain, raise interesting questions about what AI can offer to the designer, and to what extent has AI already moved into the design process and how much could it contribute digitally? With expressions of style less individualistic AI is making the Fashion Industry more intelligent.

AI New technologies from creating design process boards to developing Algorithms, recently developed machine language technologies produce and combine data from thousands of images/ videos. This data can be used to detect trends in such an objective and precise manner that would not be humanly possible for a designer. Besides trends, also more specific characteristics as design principles, such as color, shape, length, and pattern, and design, are the principles in design and can be extracted from the data. Plotters can also be used for Garment Production and standard sizing can be obtained accordingly using the required data in AI. This data output is possible to go one step further and even propose outfit designs.

Machine learning in the design process is different from conventional technologies, As it provides insights into trends and consumer preferences. However, as much as all of this sounds very promising. It is important to understand the limitations, usefulness of such technologies, as it's still in the initial stages. Some Fashion related organizations are realizing the necessity of machine learning in the design process, either developing tools in-house or in partnership with technology companies. The applications of artificial intelligence (AI) in the Retail Industry are only beginning to be realized. Earlier this year "Tommy Hilfiger" announced a partnership with IBM and the Fashion Institute of Technology to leverage AI to improve its designs. The Project is called "Reimagine Retail" and it focused on using AI to identify future industry trends and improve the design process (Schmelzer", 2019).

The project highlighted that AI will never replace the design process, instead, it will be used as a powerful input that can aid any designer. IBM's AI research tools were used to analyze customer sentiment related to each of Tommy Hilfiger's clothing items and runway images as well as to identify key themes in patterns, silhouettes, colors, and styles. AI-enabled the quick analysis of a large database of both text and visual data something that would be difficult or impossible for any designer to do on their own.
Huawei Fashion Flair is the name of the experimental app created by "Huawei" with the support of a team of Italian developers, who mixed the height of creativity with the height of technology to create a truly exclusive fashion collection.

The benefit of using AI in the design process was underscored by "Amy Taehway" EUN, a fashion design major at the Fashion Institute of Technology and one of the designers who participated in the project who said: "as a result of this project, I can see that the relationship between AI and designers will be collaborative. Technology will help designers create new and fresh products. In the end, I believe a designer's role will be the same. They will research inspirations, they will design, but they will have better options and a different perspective offered to them by AII technology"

The use of AI in retail is here to stay with more exciting uses up ahead. eg, "Stitch Fix" is a US-based online personal styling service. Wherein you receive a box (a "fix") with four to five garments or accessory items based on the information you have provided about yourself. An algorithm sets out a decision along with a human stylist, comes up with a personal style for the customer, and makes a decision what to dispatch to the customer according to his taste and data (Schmelzer, 2019", "The Cognitive World Supply Chain." "Forbes.").

Every human desire's to express his individuality, and one way to achieve that is through fashion. As the fashion industry is one of the biggest in the world, estimated at 3 trillion dollars as of 2018, representing 2 percent of global GDP. Much of the brick-and-mortar traditional retail as well as online is dedicated to the sale of clothing and fashion items.

AI is fundamentally transforming the fashion industry from the way that fashion companies manufacture their products to the way they are marketed and sold. AI technologies are transforming the fashion industry in every element of its value chains such as designing, manufacturing the logistics, marketing and sales. Fashion brands are also starting to leverage conversational assistants through chatbots and voice assistant devices such as Amazon Alexa, Apple Siri, Google Home, and Microsoft Cortana.

AI technologies such as computer vision technologies to be more streamlined. Whereas it used to be that only e-commerce giants such as Amazon and Walmart used machine learning algorithms to figure out sales, trends, now small retailers are also leveraging machine learning to understand this dynamic Fashion Market, which may provide them a better chance to succeed. Intelligent AI-enabled systems can also help provide greater intelligence for fashion brands by identifying patterns and predictive analytics that can provide insight into fashion trends, purchase patterns, and inventory-related guidance. One company at the forefront in innovation with AI applied to fashion," Stitch Fix" an online personal styling service. The company is using machine learning algorithms to provide better customer experiences for customers and make their supply chain more efficient.

Effective supply chain management minimizes cost, waste, and time in the production cycle. The Industry standard has become a just-in-time supply chain where retail sales automatically signal replenishment orders to manufactures. Retail shelves can then be restocked almost as quickly as the product is sold. One way to further improve on this process is to analyze the data from supply chain partners to see where further improvements can be made. By analyzing partner data, Perkins and Wailgum, .identify three scenarios where effective supply chain management increase value to the supply chain cycle:

1) Identifying potential problems.

When a customer orders more products than the manufacturer can deliver, the buyer can complain of poor service. Through data analysis, manufacturers may be able to anticipate the shortage before the buyer is disappointed.

2) Optimizing price dynamically.
Seasonal products have a limited shelf life. At the end of the season, these products are typically scrapped or sold at deep discounts. Airlines, hotels, and others with perishable "products" typically adjust prices dynamically to meet demand. By using analytic software, similar forecasting techniques can improve margins, even for hard goods.
3) Improving the allocation of "available to promise" inventory:
Analytical software tools help to dynamically allocate resources and scheduled work based on the sales forecast, actual orders, and promised delivery of raw materials. Manufacturers can confirm a product delivery date when the order is placed. Significantly reducing incorrectly filled orders.

With supply chain management becoming so complicated, many types of software have been developed to optimize supply chain performance.

2. Conclusion

Computer vision enabled by machine learning is also being used to help spot fashion fakes and counterfeit products. Previously spotting fakes required the trained eye of specialized customs or other enforcement officers. Now, AI systems can keep a constant watchful eye on counterfeit products that look increasingly similar to the real ones. In this area, AI technologies are being applied by customs and border enforcement to help spot the validity of the high-end products which are frequently counterfeited.

AI technologies can add value in every part of the Fashion Industry, from the design process and manufacturing processes to sales and marketing of finished products, the future of Fashion is intelligent with Artificial Intelligence for sure.

References

[1] Balchandani Anita, 2018, "the three keywords for 2018 were changed, digital and fast", McKinsey, "state of fashion".
[2] Balchandani Anita, dated.Nov 20, 2019, "The state of Fashion" -2019," "A year of awakening", "McKinsey and Company"
[3] "Schmetzer Ron", June 16th/2019, "The Fashion Industry is getting more intelligent with AI, "FORBES"
[4] "Schmetzer Ron," Dt. July 16th/2019, "The Cognitive World Supply Chain" "FORBES."