Artificial Intelligence (AI) in Fashion Industry.

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**DECLARATION**

We confirm that the research mentioned in the article is original to us and has not been copied. Every source has been properly credited. This article's work is particular and satisfies the institution's specifications. We confirm that this paper's similarity index is within an appropriate range of 15%.

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Sincerely,

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1. **ABSTRACT:**

Artificial intelligence (AI) is changing the fashion industry by combining craftsmanship with technology to be creative, productive, and sustainable. The article explores the evolution of AI in every aspect of fashion, from generative AI that speeds up production times and customization to predictive analytics that adjust forecasts and increase customer satisfaction. AI is enabling new ways to manage clothes in life, improve resource use, and reduce waste. Through fashion product case studies, the article highlights the role of intelligence in reducing design time, creating personalized fashion products, and promoting good practices. Furthermore, AI with online marketing improves the user experience through online testing and personalised suggestions.

**2. INTRODUCTION:**

**2.1. Background Study:**

AI is becoming a powerful force that is transforming the way things are created, shown, and constructed. AI is applied in various processes to improve customer satisfaction, foster innovation, and increase efficiency. AI enables the fashion industry to adapt to rapid consumer demand and business trends by providing personalized fashion recommendations to supply chains.

**2.2.Rationale:**

From increasing efficiency and sustainability to providing more individualized customer experiences, the fashion industry's adoption of artificial intelligence (AI) is revolutionizing how businesses operate. AI meets the increasing need for sustainability by enabling accurate trend forecasting, streamlining production, and cutting waste. Automating design activities and producing creative ideas also facilitates creative processes and frees designers to concentrate on new possibilities. AI-driven services like virtual try-ons and personalized shopping improve client engagement as digitalization picks up speed. This research examines how AI changes the fashion industry and gives firms a competitive edge through creative business models and data-driven decision-making.

**2.3.Research Gap:**

AI integration has driven the fashion industry to change quickly, but there are still a lot of gaps and room for improvement. Critical market gaps include the following:

• Customization and Personalization: Although AI has advanced in personalizing the shopping experience, utterly customized fashion goods still need to be added. While many manufacturers provide tailored suggestions, AI-powered, completely customized clothing creation is still in its early stages.

• Sustainability: Despite the application of AI to enhance sustainability in the textile sector, complete lifecycle management still needs to be improved. Eventhough, Artificial intelligence (AI) can aid in waste reduction and resource optimization, more sophisticated solutions that consider a garment's whole lifecycle—from design to disposal—are still required.

• AI in Design: Although AI is utilized to help design and anticipate trends, there still needs to be a gap in its integration into the creative process. AI can help in use advanced designing methods comparing to the present designers who follow the traditional methods.

* 1. **AIM of the Project:**

To know how AI is changing the fashion sector. Our goal is to examine the application of AI in several fields, such as online shopping, fashion design, and clothing manufacturing. Also to examine the advantages and difficulties of integrating AI into the fashion industry, with an emphasis on how it may improve sustainability by minimizing waste and maximizing resources.

**2.5 Research Questions**

* What effects do you see artificial intelligence (AI) having on the fashion sector over the next few years, particularly regarding sustainability and manufacturing efficiency?
* What possible privacy and ethical issues are AI raising in fashion, particularly regarding online shopping?
* What obstacles do you think the fashion industry will face when implementing AI, and how might they be overcome?

1. **LITERATURE REVIEW:**

**Artificial Intelligence: What Is It?**

The process of turning digital computers into functional robots that can do both physical and non-physical tasks is known as artificial intelligence. They are made to be able to carry out any assigned activities and make judgements based on the inputs that are given to them. Its ability to function and think like a human being is what has caused its current global acclaim.

**APPLICATIONS OF AI IN DIALY LIFE**

1. Artificial Intelligence in E-Commerce

Artificial Intelligence is widely used in the field of E-commerce as it helps the organization to establish a good engagement between the user and the company. Artificial Intelligence app helps to make appropriate suggestions and recommendations as per the user search history and view preferences. There are also AI chatbots that are used to provide customer support instantly and help to reduce complaints and queries to a great extent

2. The Use of Artificial Intelligence in Education

Until several years ago, the whole educational system was planned and run by humans. However, artificial intelligence apps are now also impacting the educational sector. Course suggestions, data analysis, student decision-making, etc., benefit the teachers and the students. These days, artificial intelligence is used to create automated notifications for parents and students about exam results and vacations.

3. Artificial Intelligence in Lifestyle

Artificial Intelligence has a great impact on our lifestyle. There is various day to day that we do easily are possible due to the use of Artificial Intelligence app. Some examples are spam filters in the mail, fraud call detection, face unlock of mobile, fingerprint sensors in our mobile and laptops, etc are only possible due to Artificial Intelligence.

4. Artificial Intelligence in Gaming

Artificial Intelligence is really dominating the field of the gaming industry. Artificial Intelligence is used to make a human-like simulation in gaming. This enhances the gaming experience. Apart from that, AI is also used to design games, predict human behavior, to make the game more realistic. Various modern games use real-world simulation for gaming using AI.

5. Artificial Intelligence in Data Security

Data security is one of the major concerns for any tech company, as it keeps the information about many users’ credentials secret information of a company. There are many AI application that is used o keep these data safe and prevent form any kind of vulnerable threat and attacks.

6. Artificial Intelligence in Marketing

Artificial Intelligence is very dominating in the field of marketing as it is used to make an engagement with consumers using AI. AI is used to make make the reach by targeting the appropriate audience for a particular product. AI is used in the ad sense as it uses the search and purchase history to recommend the products. Apart from that. th chatbots are used to resolve the consumer issue in less time.

7. Artificial Intelligence in Entertainment

AI is also used in the field of movies and entertainment. This field uses artificial intelligence for tagging various content to a specific person. Also, the entertainment industry used artificial intelligence for the categorization and classification of content according to the user.