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TEXTILE ART
AND FASHION DESIGN

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APPLICATION OF ARTIFICIAL INTELLIGENCE FOR THE DEVELOPMENT OF SUSTAINABLE FASHION INDUSTRY

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At the beginning of the 21st century, technology had already started affecting our lives. Artificial intelligence (AI) and robots are already part of our lives. The fashion industry is also rapidly changing technologically.

Digitalization and artificial intelligence provide many opportunities for fashion brands as well as determining the successful development of various business models. AI has been very successfully applied by predicting fashion trends and significantly increasing efficiency in many of the stages of the logistics chain. The imposed trend to transform the fashion industry in accordance with the contemporary global trends of digitalization, sustainability and circular economy also implies the application of AI.

This article examines the key technological trends in the fashion industry provoked by digitalization: Visibility and traceability; quality management; logistics 4.0. The application of artificial intelligence (AI) in the fashion industry is consistent with the understanding that artificial intelligence is not a technology, but instead a description of how the systems that are using it, work. Modern practical applications of AI are of the *Narrow AI* type-involving intelligence established only when performing specific tasks in one application area. The benefits of applying AI to the fashion industry are threefold: Design; marketing; supply chain management. It can be claimed that the concept of sustainability can be recognized more effectively thanks to the benefits of applying AI in: reducing waste and pollution, online shopping for clothes and extending their life, 3D design and virtual fitting, personalization in measurement, purchase and service. And the primary directions in which artificial intelligence can help develop sustainability in fashion and the development of sustainable business approaches and models are: Creation of sought after products and services; opening up new business opportunities; sales performance; waste reduction; improving customer satisfaction; generating more sales; increase profits; streamlining the supply chain; saving time and money; getting ahead of the competition.

While AI demonstrates the potential, it also sets new challenges that businesses can to address. As with any technology, the pros and cons of AI in fashion are a matter of perspective. In addition, with the right approach, businesses can use AI to cause growth and improve the bottom line using human-centric approach, demanding personalization and concerns about the environment and society. AI should be introduced in a way that encourages creativity and diversity. This can deliver a significant impact on the fashion industry as well as the economy as a whole.

Keywords: artificial intelligence, sustainable, fashion industry

ARTIFICIAL INTELLIGENCE IN FASHION DESIGN

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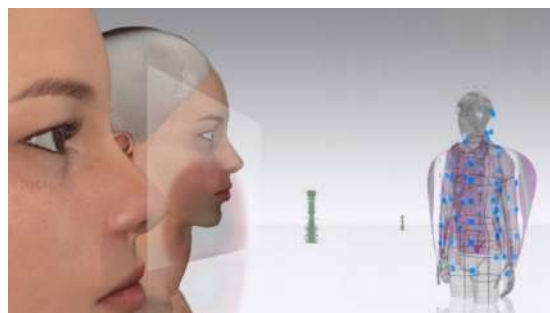
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The development of artificial intelligence (AI) technology in all areas of human presence on planet Earth and beyond cannot be stopped. And it is not necessary, because progress is also related to overcoming the limitations in the abilities of the human individual, which is actually the main role of AI. The textile industry and in particular the fields related to the design of textile products are no exception and people related to this branch should be well informed in order to position themselves with their useful presence in a not always correct environment of AI applications, as and participate in the creation of such applications.

This paper examines the latest trends and advances in the use of artificial intelligence in the fashion industry, focusing mainly on AiDLab - the first research platform that focuses on the integration of artificial intelligence (AI) with design. Also introduced is AiDA, a first-in-the-market technology that enables fashion designers, based on their creative inspirations, to work with AI to create original designs. AiDA begins its work by initially recognizing the design inspiration through the selection of a conceptual board (board, picture) - mood board.



Likewise, the authors begin their article by challenging anyone reading to initially recognize their own attitudes toward AI in general. Keeping in mind the undeniable benefits to society of the achievements and use of AI, a brief emphasis on current negative phenomena and harms of the use of AI is expressed, and the most dangerous quality of AI is also fixed - the complete elimination of the need for human mediation and our ability for wisdom.

Basically, the concept is developed that the development of technology cannot be stopped and everyone must find their progressive and sustainable place in the processes. To better understand the inner workings of AI systems, incl. and in fashion design, a specific machine learning model is presented for knowledge acquisition and storage.

All six major stages of a designer's work are covered: Theme/Concept Identification, Design Element Research, Ideation, Design Refinement, Mock-up and Prototyping, Model Assembly.

The authors also mark the main applications (they think) of artificial intelligence in fashion - Design and creativity, Generation of design ideas, Customization of fashion, Sustainability and production, Marketing and customer service, not forgetting the trends and challenges.

Keywords: fashion design, artificial intelligence

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MODEL DEVELOPMENT OF A BULGARIAN NATIONAL COSTUME FOR A WEDDING

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Every second on this planet we breathe without even thinking. We are born with a huge breath of air and then we are dressed. Our body breathes, but through our clothes.

Necessity or dependence coming from ancient times?

The appearance of the first garments dates to before Christ, constantly undergoing development, with the clothes of different nations and civilizations being their business card. So is the Bulgarian national costume, which is one of the most iconic and unique symbols of our nation worldwide. According to scholars and historical sources, the patterns and ornamentation of our national dress have been known in the Balkan region for at least 3 500 years, which means that we ourselves are an extremely ancient and valuable nation in European history. Research by some thracologists in the 1970s and 1980s claims that the ancient Thracians wore, as well as depicted their idols with, "garments" whose style and ornamentation closely resembled ours that we know today. This may lead us to the solid theory that we are most likely not "outsiders" come from Asia, but indigenous peoples to the Balkans. We also find that our clothing is mainly of Slavic origin but contains elements of nations with whom we have interacted with over the years - Turks, Greeks, Albanians, Vlachs.

What we are going to look at in particular is an model development of a Bulgarian costume from the area of Kyustendil, dating back to the mid-19th century, made on the occasion of one of the most important occasions in the life of a person, in this case, of a happy lady - the wedding.

The components of the ensemble are a shirt, a saiya, an apron, a belt with pafiti, a cloth tied at the waist, and a headscarf. The making of the ensemble is almost entirely from recycled materials, for example the fabric for the apron and the embellishments on the saiya are bought from a second hand shop, the headscarf is a repurposed scarf and the pafiti are borrowed.

We have created a jewel carrying the authenticity of our culture, and on a shoestring budget we are on trend for sustainable fashion.

Yet we want to continue to breathe on this planet!



Key words: tradition, reenactment, Bulgarian national costume, fashion sustainability

ORGANIZATIONAL PROCESS OVERVIEW IN GARMENT MANUFACTURING UNTIL THE BEGINNING OF THE 21ST CENTURY

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Abstract

The production of ready-made clothes is a complicated process. The first attempts at mass production of garments date from the middle of the nineteenth century. A revolution in the clothing industry occurred in 1857 namely when Isaac Merritt Singer (27.10.1811 – 23.07.1875) patented and introduced an improved model of a foot sewing machine.

With the elaboration of a system consisting of consecutive processing operations, which require a lean and exact organization to achieve effective results, the commercial clothing industry developed through the years to its present condition. The current text footprints the various stages of this organization, by exploring the correlation between each one of them. The order of the enlisted activities is not random. The role of each one of them is extremely important for the completion of the ready-to-wear product and its initiation to the commercial sites and respectively to the customers.

The purpose of ready-made clothes production is the crafting of wear and accessories for men, women and children from different cultural, ethnic and economic social strata and population groups. The ready-made manufactured goods are executed in standardized sizes. The model of organization of the whole process depends on many factors, such as what type of garments are being produced, and for what kind of customer they are made – for one's own distribution or for an external trader. Also, the organization is defined depending on the capacity and the size of the manufacturing company, the number of workers, commercial sites etc.

The production of ready-made clothes includes processes such as: preliminary research considering economic deliberations, commercial realization, and market demand; fashion trends and novelties; selection of fabrics and materials for production; design; patterns and stencils making, creation of technological production cards; fabric spreading process and cutting; processing; pasting; assembly; sewing; ironing; finishing and handmade operations; quality control and labelling. The end products are intended to be offered and negotiated for wholesale or retail markets, the goal is purchase and wear by the end user – the customers.

The process of optimization of the working cycle continues to this day.

Keywords: organization, ready-made garment production



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POV – THE WAY ALIENS SEE US

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Who are they? Can we imagine what they see? What if they exist? What if the aliens are us? If we accept that everything is possible then everything is possible.

“Arrival”, “Sighs”, “Interstellar” and many others. Movies with the concept wrapped around the idea of how we visualize aliens and our first contact with them. What if we swap the point of view? How would THEY see US?

Space age. We immediately think of Star wars or fashion inspired by science fiction. "Space Age" is heavily influenced by the so-called Space Race. "Space Race" is a "competition" in space exploration between the two Cold War rivals USA and USSR in the period 1957-1975 for dominance in space flights. People were fascinated by space and science fiction in the 1950s, so a really fun trend developed in the 1960s with movements in fashion, the advertising business, popular science fiction books, movies and TV series like Star Trek, Dan Dare or Lost In Space. Robots, satellites and a trip to the moon are helping to make what was once only a fantasy a reality. The trends from these novelties therefore permeate art, fashion and all visual arts.



In my collection I've expressed a very detailed and delicate design process in which I have deconstructed and constructed the so familiar silhouette of the classic outerwear coat. I have played with unusual capitone fabrics to create that luminescence feel in the touch as well as in the photo shoots of my designs. Among the fabrics are: velvet (silicon ball), polymer cotton fabrics like circular knits, wool and application of resin coating to give the metallic sheen to some fabrics. I have used mostly “V” shaped and “I” shaped silhouettes in the collection to create that feeling of a wrapped-around “object” that the human plays to be.



Keywords: fashion collection, aliens, luminescence, coats, outerwear, reconstruction

WEAVING KNOTS AND THEIR IMPACT ON THE ARTISTIC TEXTILE CREATED ON A VERTICAL LOOM.

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Nowadays, with the availability of machines in all their forms, hand weaving on a vertical loom, thread by thread, is a particularly special process. The tradition of classical tapestry has been preserved and is practiced to this day in the Artistic Textile speciality at the "Dimitar Dobrovich" National Art High School - Sliven.

Parallel to the tradition, the students' searches in the direction of modern artistic textiles are also present, which necessitates the incorporation of various textures into the smooth tapestry. This is achieved through the weaving knots, which can create many different textures, small, medium and large volumes in the fabric. Appropriately combined, they contribute to the overall harmony of the composition in the artwork.

One of the main weaving knots that is used is "sumac", also known as "through hand", as it can acquire a different appearance, depending on the type and thickness of the material with which it is filled as well as the distance from each winding.

Another essential technique is the tufted rug technique or the so-called "tied technique". It consists of tied bundles of yarn in knots, on the warp so that they form a tufted rug. This technique is very characteristic of the making of bedding fabrics, but has been also successfully applied in the field of wall carpet and it is most often combined with smooth tapestry and other less voluminous weaving knots.



Traditionally for the creation of the smooth tapestry, a cotton warp is used, twisted wool yarn, silk thread, cotton or a combination of these. The weft and the base must not have the property of elasticity. No matter which weaving knot is chosen, an important technological feature is to reweave with a thin yarn after each row is completed to give the fabric density and stiffness.

When we talk about the contemporary artistic textile, we may come across works that incorporate quite unconventional materials. Some of them are cotton and hemp ropes, sisal, coconut fibers, nylon, etc. The techniques by which they are integrated into the tapestry are numerous, and the work on a vertical loom allows the students to create new weaving knots, based on the main ones, in the process of work. Encouraging experimental work like that helps to develop their artistic skills.

Keywords: weaving, vertical loom, weaving knots

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AUTHENTICITY AND STYLIZATION OF THE FESTIVE WOMEN'S COSTUME FROM THE CHEPIN REGION - THE VILLAGE OF DRAGINOVO

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The costume is a general term for the folk traditional clothing of the Bulgarians from the Renaissance to the middle of the 20th century. It intertwines the beliefs, traditional culture, life and lifestyle of the Bulgarian people.

Clothing occupies an important place in folk culture. Through its fabric, color, cut and decoration, clothing indicates a person's nationality, residence, gender, age, marital status, occupation, social affiliation and religion.

A relatively independent part of the renaissance clothing of Bulgarian women is the festive women's costume from the Chepin Valley. From an initial study for the period of the 60s of the 20th century, its main parts with the characteristic dialect names of the area were established:

- White shirt with embroidery on the chest;
- Atlas;
- Kurk;
- Gland (pafti);
- Pishtemal (apron);
- Printed socks;
- Hat;
- White and red head covering.

All parts are handmade: woven, knitted, embroidered, etc.

The present study is descriptive in nature. The emphasis is on the authentic Draginovo's costume from the 60s of the 20th centuries and that of the 21st.

The subject of this article is the comparison: from past to present in the women's holiday costume from the village of Draginovo.

The purpose of the development is in two directions.

First to study, describe and update the terms and names of the parts of women's costume.

Second, to explore and describe the difference between the hand-made costume of the past and the current industrial production with modern technological equipment in sewing production.

Keywords: folk female costume, analysis, terminology

