NEO–DIGITAL NOMADISM

in FASHION DESIGN

combining the concepts of peripatetic
artisans with digital nomadism

POLITECNICO DI MILANO
Master Degree in Design for the Fashion System

Consolidation Thesis

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Chapter1
Introduction

1.1
Background

The inspiration came from Chloé Zhao's film Nomadland, which follows a woman who decides to travel to the United States in her van after losing everything. Its exploration of nomadism as a means of reconnecting with nature and discovering the meaning of life struck a profound chord, echoing a broader shift in mentality towards the need for mobility.

The nomadic lifestyle is growing in popularity, mainly due to the rise of the digital nomad movement, driven by remote workers unencumbered by traditional office jobs. Nevertheless, interest in mobility has peaked in popular culture in the wake of the pandemic, a global health crisis that subjected us to long-term confinement, massive unemployment and the loss of loved ones. This convergence of crises has inspired many people to reimagine the definition of a joyful, radically fulfilling life. Meanwhile, MBO Partners (2020) states that most digital nomads report being highly satisfied (81 percent) or satisfied (9 percent) with their work and lifestyle. It shows that this way of working and living will remain and continue beyond the post-pandemic period.

Combining my inspiration with a new lifestyle for digital nomads, I want to propose a hypothesis of what the final form of digital nomadism will be in the future. Therefore, my research aims to discuss the post-pandemic limitations that digital nomadism can break and to demonstrate a more accessible and equal lifestyle for digital nomadism in the future through fashion design.

1.2
Purpose and significance

The purpose of putting forward digital nomadism in the future is to improve the problems encountered by digital nomadism and to continue the advantages of high-tech solid applications in this group. Furthermore, by breaking the limitations of the post-epidemic phase, new possibilities can be created starting from lessons learnt. The study of how nomadism will balance work and life in the future ultimately reflects the more significant theory that imagines this group can be reflected – the balance of decentralization and globalization.

Therefore, the significance of my research is how digital nomads can adapt to both the outdoor natural environment and the digital era society more freely and equally after the post-pandemic period. As well as the future era of decentralization, people will survive in this more balanced form of neo digital nomadism.

1.3
Research methods and expected results

The proposal and development of this topic will be based on the related theories of traditional handicrafts, modular design and wearable art. The characteristics of new digital nomadism are summarised and innovated through the analysis of visual elements such as fabrics and silhouettes in clothing design.

Taking nomadic digital design as a clue, I divided digital and nomadic into two general directions for analysis. The digital part mainly analyzes and summarizes the redefinition of formal wear and the redefinition of the concept of portability in fashion design with fabrics, colours and silhouettes as a means of expression. The nomadic part mainly analyzes the nomadic characteristics of traditional nomadic and digital nomadism and summarizes the complementarity of the two groups. Finally, combine digital and nomadism with exploring the clothing design collection, as well as the future development direction of circular economy and decentralized virtual world, while providing new value for the inheritance and innovation of traditional nomadic and digital nomadic culture.

Chapter2
Historical research
on Peripatetic nomadic

2.1
Peripatetic artisans habits

Traditional nomadic is defined as a community member who does not have a fixed place of residence. They regularly move between particular areas. There are three types of nomads around the world: hunter–gatherers (moving in their search for food), pastoral nomads (moving with their livestock) and peripatetic nomads (moving to sell their craft).

Among traditional nomads, peripatetic nomadic are distinguished from the other two forms of nomads, which has the same attributes as digital nomadism. It can be seen that peripatetic nomad's livelihoods are based on handicrafts and highly specialized individual skills, which is highly consistent with the lifestyle of digital nomadism, which is nomadic while working and not derailed from the world. So I will focus on analyzing the habits of peripatetic artisans.

Peripatetic nomads are spatially mobile populations that migrate between locations, trading or providing services to the settled populations in exchange for money or products. This type of itinerant artisan is mostly seen in the world's industrialized nations. The Roma are one of the best instances of such peripatetic nomads. This ethnic group of nomads is known as "gypsies" in portions of Europe, Asia, Latin America, and the southern United States. Their ancestors can be traced back to the Indian subcontinent. Different groups of Roma were adept in various arts and crafts like needlework, handicrafts, bronze and gold work, agricultural labour, circus entertainment, Etc. As they moved from one place to another, they would offer their skills to the permanent populations of the region as a way to earn a living. In most of South and Southwest Asia, from as few as three to as many as thirty distinct, endogamous groups of peripatetic specialists annually visit every village and metropolitan setting. Much the same is true for most European and American communities. Recent documentation has shown that every major North American city has regularly hosted anywhere from six to a dozen peripatetic groups for at least a century or more. (Joseph C. Berland and Matt T. Salo, 1986)

Among the many and diverse populations of peripatetics, each, with few exceptions, is highly endogamous and attaches great value to cultural traditions. This commitment to great traditional values is coupled with a strong sense of ethnic identity and exclusiveness. Where kinship is always a structural and organizing principle among these communities, their group composition and tenure is closely linked to practical considerations related to the overall distribution of individual skills and resources available to exploit conditions in the communities of their peregrinations. (Joseph C. Berland and Matt T. Salo, 1986)

2.1
The Banjara embroidery art by peripatetic nomads

The nomadic tribes, or Banjaras, were not confined by the bonds and ties of urban life. This spirit of wandering from place to place expressed a sense of freedom. They are also described as hardworking, intelligent, powerful, self-assured, and honourable. The Banjara embroidery designs represent this sense of limitlessness and freedom. The traditional craft has been handed from generation to generation, and Banjara communities strive to preserve the artwork that they have inherited from their forefathers. Despite their gradual absorption into the mainstream of life, the Banjaras still continue to keep in touch with their age-old customs, traditions and beliefs. An off-shoot of Banjara needlework is the fantastic range of artistic pieces like bags, belts, purses, skirts, blouses, bedspreads, sofa backs, cushion covers and many more utility objects that meet the changing tastes and requirements of present-day connoisseurs.

Lambani or Banjara embroidery is a colourful combination of threads, designs, mirror work, stitching patterns, appliqué, or patchwork. Embroidery is done on thirteen different colours of the base fabric, the most frequent of which are dark blue or red. The base fabric is primarily hand-loomed, although they now also use ready-made accessible cloth. The fabric is constructed of cotton khadi coloured with chemical or vegetable dyes derived from Rathanjot, Kattha, Chawal Kudi, and Pomegranate peel, among other things.

Fig. 1 National costumes of the peripatetic nomads
Fig. 2 National costumes of the peripatetic nomads

2.1
The Banjara embroidery art by peripatetic nomads

There are 14 types of stitches used in Banjara embroidery. They are Kilan, Vele, Bakkya, Maki, Suryakanti Maki, Kans, Tera Dora, Kaudi, Relo, Gadri, Bhuriya, Pote, Jollya, Nakra. It also includes running stitches, which appear like small dashes that create a variety of patterns on the cloth. It is stitched with parallel lines, and a thread of different colours is interwoven between the stitches to create a horizontal pattern. Most of the stitches follow a geometric pattern like squares, circles, triangles, rectangles, diagonal and parallel lines. Also, criss-cross patterns, chain stitch and overlaid quilting stitch are made. Different types of stitch patterns are used while embroidering to give the design a unique look. The combination of vibrant colour threads makes the design more striking. The centre of the designs is embellished with mirror works. The mirror is placed on the fabric, and the thread is embroidered over it to hold the mirror in the thread, which prevents it from falling off. Traditionally, Lambani embroidery was made of wool, cotton, silk, gold or silver threads, adding richness to the work.

Fig. 3 Lambani embroidery wall hanging

2.1
The Banjara embroidery art by peripatetic nomads

Additionally, beads, small cowrie shells and even low denomination coins are held together in a garland of stitches that embellish the edges of a piece. Detail of a Lambani embroidery piece in thread and mirror work with a border made of white metal beads and 25p coins (a quarter of a rupee or approximately 1/65th of a dollar). The coins cost them almost 300% more to buy in the market as they are almost out of use.

Some portions of embroidered Lambani textiles are so encrusted with embroidery that the underling textile cannot be seen. Mirror work is a decoration shared by many communities that are now settled but at one time were itinerant. This small square textile piece serves as a sampler of motifs, showing ways of embedding mirrors into Lambani embroidery. These are used by a group when deciding the patterning for a larger piece of work or young girls as a design sample.

A typical traditional artefact of Lambani women is this elaborate headdress with a thick circular piece. The circular piece serves as a pot rest when they carry water vessels on their heads. The head cover that is also a pot rest shows the care taken in embroidering a simple utility item. Mirrors, various coloured threads and stitches bordered with cowrie shells all make the task of carrying a heavy water pot on a Lambani woman's head an act of pride.The elongated tassles made of cowrie shells made by Lambani women for personal use, are tied to show them off well below the waist band of a skirt.

Lines and patterns on any large Lambani embroidery piece can change at a whim according to the imagination, skill and fancy of the woman embroidering it.

The current peripatetic nomadic craft crisis

The most important of these is the availability of well-paid jobs in state industries; these sources are adequate to cover their demands, so there is no desire to run a smithy as a secondary source of income; also, there is rarely the spare time required for such activity. Full-time employment in the smithy is similarly unappealing to the young, as the primitive conditions provide little enjoyment. Another primary reason is the chance that these new employment settings provide a total break from dependency on village society – a dependence that many generations of peripatetic nomadic people have greatly hated. Previously, the Peripatetics' economy and way of living depended on completing village orders.

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The Banjara embroidery art by peripatetic nomads

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2.2
The survival skills for hot climate by peripatetic nomads

Peripatetic nomads have strong outdoor survivability because they live in deserts all year round. They can survive harsh summers with healthy intelligence and a thorough understanding of their environment.
Head Cover
Peripatetic nomads would cover their heads to protect from sunburn and use to cover their faces in case of sand storms.
Clothing
Peripatetic nomads would wear black during the day. After conducting numerous experiments, including; wearing loose white clothing, loose dark clothing, an army uniform and shorts with no shirt, the scientists concluded that black and loose white clothing was the most effective way to stay calm under the sun. While the white colours' reflected the sun, the black was best at absorbing body heat.
Henna
Peripatetic nomads would use henna under their eyes to protect against the sun's glare.

Chapter3
The attributes of
digital nomadism
and peripatetic nomadic

3.1
The definition of digital nomadism

Digital nomad refers to a rapidly emerging class of highly mobile professionals whose work is location-independent. They work while travelling on a (semi)permanent basis, forming a new mobile lifestyle. Digital nomads, as a modern type of mobile professionals, have been placed between digital, nomadic, gig workers and global adventure travellers, as they incorporate features of these phenomena. (Nash et al. 2018; see Fig. 1).

Freelancing, telecommuting and travelling professionals have preceded and, to a certain extent, produced digital nomadism. Because travel and technology on the road do not make one a digital nomad, it requires accomplishing work-related tasks and professional activities while travelling. Digital nomads select their location based on leisure and lifestyle considerations rather than work or employment (Thompson 2018, 2019). Telecommuting concerns balancing family duties and employment, while digital nomadism is balancing between leisure and work (Thompson 2019). Thus, digital nomads can be regarded as telecommuters who practice a location-independent lifestyle and engage in travel.
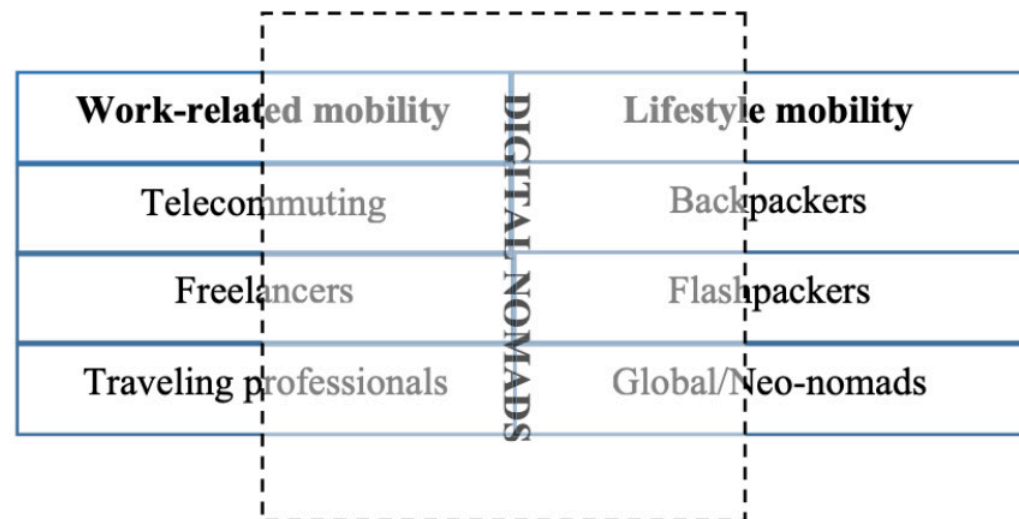
Fig. 4 Interrelation of digital nomadism with related phenomena

3.1
The definition of digital nomadism

Employment relationships and the nature of work in travel separate digital nomads from other categories of contemporary nomads. Digital nomads bring their work, often working the prescribed office hours (Thompson 2018). While global nomads might also work, many do sedentary jobs to earn enough money to get by and move on (Kannisto 2014). Moreover, "contrary to digital nomads, global nomads do not necessarily use technology as the main means of their survival on the go" (Mauratidis 2018, 31). Studies show that digital nomads do not have necessarily long for peripheral locations but stay in big metropolitan centres with sufficient infrastructures, such as co-working spaces and stable WiFi, to support their working and personal routines (Nash et al. 2018; Orel 2019; Thompson 2019).

In addition, the life of perpetual travel of digital nomads also demands a minimalistic lifestyle: "The nomads' prime requirement is portability, and that means a tool stripped of all non-essentials" (Makimoto and Manners 1997, 119; see also Nash et al. 2018). This means that the quantity of possessions is limited to the amount one can physically carry, or airline baggage allowances permit that.

3.2
Complementarity of digital nomadism
and peripatetic nomadic

From the above research on traditional nomadic and digital nomadism, it can be seen that there are many commonalities. Next, I will further find the commonalities and differences between the two groups by analysing nomadic attributes.

Digital nomadism
Disadvantage: Restricted by nomadic locations
Studies show that digital nomads do not necessarily have long for peripheral locations but stay in big metropolitan centres with sufficient infrastructures, such as co-working spaces and stable WiFi, to support their working and personal routines (Nash et al. 2018; Orel 2019; Thompson 2019). Because of the always-on-line nature of work, digital nomadism is limited to natural environments away from the hustle and bustle. The coveted wilderness, grasslands and canyons in Chloé Zhao's film may be the office locations that sedentary people yearn for.

Advantage: Strong technical and economic connection to society
In 2010, Instagram emerged, emblematic of the trend for more visual communication and supporting the wide recognition of digital nomadism as an increasing phenomenon (e.g., via cliché "laptop on beach" photos). Based on the Blockchain concept, Cryptocurrencies allowed financial transactions that did not rely on fiat currencies and nation-states. As both users and creators, digital nomads were much engaged with this new technology. Throughout the 2010s, co-working spaces became increasingly important, with their number doubling yearly: the number of remote workers (including digital nomads) reached one million in 2017 (Foertsch 2017). Dedicated digital nomad co-working spaces emerged, including Hubud (Ubud, Bali), Ko Hub (Ko Lanta, Thailand)and Hubba (Bangkok, Thailand). These "destination co-working spaces" provided a physical manifestation point for digital nomads. In parallel, online communities for digital nomads emerged, such as Nomad List, Hashtag Nomads and Dynamite Circle/TropicalMBA. Digital nomad conferences began to be organized, including DNX (from 2014) and Asia (from 2015). Co-working, online communities and conferences shaped and were shaped by the emerging notion of a shared "digital nomadism" identity. (Daniel Schlagwein, 2018) With the popularity of decentralized technology and the sharing economy, the daily activities of nomads in technology and finance are satisfied. At the same time, it can also be shown that high professionals are closely related to cutting-edge social trends. This is a positive cycle. These people have high social status and income because of the latest trends and technologies.

3.2
Complementarity of digital nomadism and peripatetic nomadic

Peripatetic nomadic
Disadvantage1: Incompatible with modern life
Generally, nomadic are perceived as incongruent with modern development (Walls, 1980). Peripatetic nomadic are alienated and poor and have little access to information and high technology. When a centrally planned and controlled curriculum emphasizes formal academic achievement rather than handicraft-related knowledge and practical skills, it is always seen as inappropriate and irrelevant, alienating Peripatetic nomadic from mainstream communities and lifestyles and leading to poor attendance and educational participation. Inequality also arises from low-quality education provided through weak infrastructure and inadequate facilities. Furthermore, the traditional use of permanent and immovable structures for classrooms and schools is not suitable for nomadic peoples who are constantly moving, migrating from settlement to settlement according to seasons and occupational needs. Constant migration disrupts Peripatetic nomadic studies because their stay in settlements is not extended enough for learners to complete an academic year. It is difficult for peripatetic nomadic to master primary education, and it is even more out of touch with mainstream society's latest science and technology. Because the devices that can both accept external information and maintain nomadic portability are often radios, they cannot be used through high-tech devices such as laptops and pads. Therefore, social trends and occupations related to high technology will not be detected or involved by peripatetic nomadic.

Disadvantage2: Low social status
During the 600 years of peripatetic nomadic presence in Europe, they have always lived and pursued their occupations on the fringe of society. (Tomka, Miklós, 1984). Peripatetics generally enjoy a deficient social status in the eyes of more permanently settled populations (Joseph C. Berland and Matt, 1986) The anti-nomadic prejudice is evident also from the practices in which the state engaged. In early modern Europe, where popular uprisings were a constant threat, the state needed to control people, and people who stayed in one place were much easier to control. In addition, sedentary people were easier to tax, call up for military service and subject to various reforms. As a result, repressive policies were put in place against anyone who lived a troubled life: most obviously the Roma, the Yenish, the Sami of northern Scandinavia, and Irish travellers, tinkers, hobos, circus people, wandering Jews, and many others. This history of prejudice and repression is, embarrassingly, ongoing. (MacKay et al. ,2014) In historical research, it can be seen that anti-nomadic sentiments may be the most widely shared of all prejudices. Therefore, traditional nomads are often seen as marginalized groups that do not enjoy a high social status in settled societies.

3.2
Complementarity of digital nomadism and peripatetic nomadic

Peripatetic nomadic
Advantage1: Strong outdoor survivability and livelihood ability
Nomadic has the potential to outperform urban settlers in successfully adapting to climate change risks. Nomads adapt quickly to changes in their natural environment by adjusting migration routes and timing away from disturbed and degraded areas. Whatever is called or wherever found, peripatetic artisans, entertainers and other specialized nomads have several characteristics in common besides varying levels of spatial mobility associated with their diverse subsistence pursuits. Undoubtedly the most striking feature of their social organization and individual activities is flexibility and sensitivity to the elements comprising the social and ecocultural environments of those communities among which they maintain themselves. They are especially attuned to changes in social and economic circumstances as well as abroad spectrum of other factors that may influence patterns of human needs and desires in each region, community and even specific households they exploit. Often their advanced knowledge and astute predictions about ecological, political, economic and other factors among regions motivate their patterns of mobility and activate the choice of particular skills, goods and services incorporated into their peripatetic repertoires. To this extent, they are both individually and corporately personifications of Salzman's (1972) notion of multi-resource nomadism. (Joseph C. Berland and Matt, 1986)

Advantage2: Not restricted by nomadic locations
Regarding the ease of movement and nomadic paths, peripatetic nomadic have a place for digital nomadism to learn from. Peripatetic nomads live in tents or other simple structures that can collapse within a few hours and take them to the next place. They were at home in their new location, putting away the tent.
Although peripatetic nomads are not moving around randomly, their movements are regular; they follow a particular path. Which paths are chosen depends on the geographic distribution of opportunities and the availability of jobs. Together, these paths form a network that allows us to move from one place to another and from one place to anywhere else in the network of paths

3.2
Complementarity of digital nomadism and peripatetic nomadic

Advantage3: Equal social status
The importance accorded to these unique resources by peripatetic men and women is considered equal. Among peripatetics, men and women generate income equal proportions (in 3 cases = 100%). Among peripatetics, women are praised and valued when they bring wealth, offspring and prestige. Peripatetic women have a higher status than pastoral women. (Aparna Rao, 1986) By analyzing the advantages and disadvantages of the two groups in this chapter, it can be seen that the properties of the two groups are complementary. In terms of connecting with the outside world, digital nomadism mastering super technology can compensate for the disadvantage of peripatetic nomadic being disconnected from the world, and good social status and income also make up for each other's benefits. However, in terms of nomadic locations, the limitation of digital nomadism is reflected in the inability to better contact nature due to the high requirements for the surrounding environment. This is from the outdoor solid survivability and livelihood ability of peripatetic nomadic and the way of nomadic paths, and learning can be effectively improved. In terms of equal social status, in a stratified society, women belonging to low-ranking groups will enjoy higher status within their respective groups than women of high-ranking groups of the same larger society within their groups. (Aparna Rao, 1986) The equal social status of men and women of nomads can be more advocated in mainstream society.

Over the past few decades, a growing sense of vulnerability comes with growing exposure to world markets, stoking new fears. Borderless can lead to homelessness and anxiety.
In other words, human desires seem to be incompatible. We want to exchange and the prosperity it brings, but we also want the protection that a home provides. However, we will argue that these ideas seem out of place because sedentary people find it challenging to combine them. For nomads, however, it is easy. Although they live in a borderless world, their society is orderly. While the new nomads of the 21st century may seem to have little in common with the last nomads, the logic of wandering life is always fundamentally different from the logic of sedentary life. Knowing more about the logic of nomadic societies, we will be better prepared to meet the challenges of globalization.

By applying it to peripatetic nomadic, the barriers created by capitalist social hierarchies can be overcome, combined with contemporary nomadic lifestyles, making Neo digital nomadism a space in the image of modern and global communities. The trajectory of Neo digital nomadism will be highly aligned with the ongoing globalization process.

Chapter4
Digital nomadism:
How nomadism is transforming in the digital era

4.1
The redefinition of formal wear

Digital nomadism pursues freedom and emphasizes individuality. Get rid of the traditional office environment, and formal wear is no longer required daily in the life and work of digital nomadism. This feature of digital work can be modified at any time during the working process, as it is easy to modify and can be combined through partial productions. Design work is done through analytical and methodological thinking rather than skilled integrative thinking. The design process expands public participation and intervention opportunities as barriers are lowered. Traditional design work is how designers complete a product as a whole, and it is almost impossible for consumers to change the finished design. However, the flexible thinking of digital nomads and their roles as producers and consumers requires a flexible design system that can be transformed according to user intent, and the form of design that meets this need is the modular design.

Modular design is a type of design mode that makes clothing more fascinating, allows the wearer to participate in decisions, and expands the range of clothing styles available. However, it is possible to extend the service life of garments. In the current "rapid fashion" market, the modular design concept could be a game-changer, allowing us to strike a balance between low-carbon, ecologically responsible needs and fashion.

Modular design is frequently integrated into the "multi-functional design" concept, thanks to its tremendous diversity. Of course, modular design can produce the effect of multi-function design, but modular design can truly actualize more possibilities. The modular design combines certain elements to make a specific function subsystem, the subsystem as a universal module, and other product elements in a range of combinations to form a new system, resulting in various distinct or identical functions and product performance. Clothing with a modular design is precisely dismantled into separate sections, and each portion can be deconstructed and restructured with others. Fashion with a modular design is no longer considered a full product but rather a collection of multiple parts. These modules can be combined in any way the owner desires, resulting in many possibilities.

4.1
The redefinition of formal wear

The value of modular design is embodied in the three main features. The first feature is diversity. Modular design creates clothing pieces that, on the one hand, allow the wearer to participate in the selection and assembly process, significantly increasing the interestingness and interactivity of the design, maximizing the care for the wearer's emotions, and allowing the wearer to participate in the design of the wearer actively. The half proposition design method converts design from one-way output to two-way interaction. Modular design, on the other hand, may vary the clothing style through different module assembly, satisfy various needs, and extend the clothing service cycle as much as feasible at a cheaper cost. The second characteristic is adaptability. Design, manufacture, sales, use, and trash are the five phases all regular clothing products must undergo. In comparison to traditional clothing, modular clothing provides a great degree of flexibility in each process: the seller can design, make, and sell modules based on market demand, while purchasers can reject modules they do not require and keep only the necessary components. Modularity makes it possible to allocate resources efficiently and consume less energy, precisely what the low-carbon world requires. The third feature is continuity. This is a unique characteristic of modular design that general clothing does not have. Modular design can be utilized in only one garment, or it can be used in a variety of products or a series of products. When a set of modular standards apply in several series of long-term products, the module bought this season can be combined with the module of next season and the following season. That is the best way to gain the value of environmental protection.

The Threadlab studio launched a modular DIY shirt (as seen in Figure2). The designer divided the shirt into four modules: clothes, collar, cuff and chest pocket. The body has two modules, including long and short-sleeved, collar, cuff, and chest pocket, providing several different module styles. After the buyers are free to choose the components module required, they complete assembly by ironing, this way of dismantling is more detailed and has greater freedom. In addition, the unified specification component can realise the transboundary use, which means that the collar module can be used not only in this body module but also in another body module, considerably increasing the generality of each module.

4.1
The redefinition of formal wear

The Threadlab studio launched a modular DIY shirt (as seen in Figure5). The designer divided the shirt into four modules: clothes, collar, cuff and chest pocket. The body has two modules, including long and short-sleeved, collar, cuff, and chest pocket, providing several different module styles. After the buyers are free to choose the components module required, they complete assembly by ironing, this way of dismantling is more detailed and has greater freedom. In addition, the unified specification component can realise the transboundary use, which means that the collar module can be used not only in this body module but also in another body module, considerably increasing the generality of each module.

The modular design of Bernice Pan's trademark DePloy (as seen in Figure6) is more notable for its generality. It continues to adopt a modular design approach in numerous season products, which means that the DePloy series module can be assembled with the module from the following season or another season. As a result, module service life is prolonged to the maximum extent possible, and the value of modular design is further demonstrated.

Fig .5 The Threadlab studio's modular DIY shirt
Fig .6 Bernice Pan's trademark DePloy

4.1
The redefinition of formal wear

Modular design is like a Lego block; different shapes are completed by where or how each part is connected. The designer divides the product into several parts, each part into a different shape or colour, and then the consumer decides on each part of the customer's own. This is a design designed to complete the customer's style as a way to complete the design by choosing and assembling it to the customer's liking. Issey Miyake's A-POC (A Piece Of Cloth) articulates the novelty that fashion seeks in the digital age by showcasing innovative production methods employing new technologies. It is a system that allows anyone to cut and wear the pieces they want according to the cut line by continually creating entire garments on tubular knit that can be coordinated from head to toe. It can be said to be a very innovative work. Because it overcomes the limitations of material properties and sewing techniques, it can be tailored and worn according to the wearer's wishes (McDowell, 2000). (as seen in Figure 7)

Modular design also includes disassembling modules and learning how to splice components. The most widely used splicing techniques and critical features of numerous varieties, including buttons, snap fasteners, and zippers, are buttons, snap fasteners, and zippers, due to their ease of operation. Knots offer a solid visual effect but low stability. The embedded approach is unique and intriguing, but it only applies to stiff fabrics, such as those used for air layer fabrics. Although the thermal activation adhesive film is convenient, the cost is high, and the modules cannot be disassembled again, making recurrent usage difficult. There are two types of expressions in the actual implementation of the splicing technique: recessive and explicit. The implicit chooses to utilize colour matching and amplify splicing tools to enhance the sense of presence, whereas the recessive prefers to use the same colour and lower the volume of splicing tools to minimize the sense of presence.
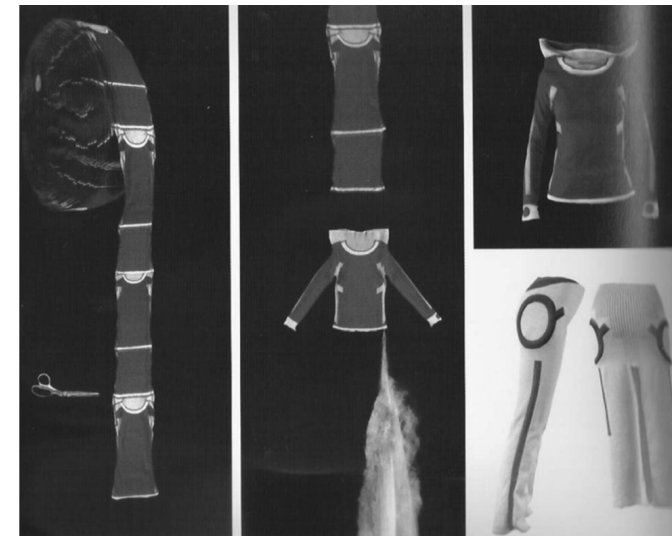

Fig .7 Issey Miyake's A-POC articulates

4.2
The redefinition of electronic devices

The previous chapter discussed the necessity of digital nomadism for the new demands of fashion for the new lifestyle, another significant component of which is electronic devices. The portable concept can better fit and meet the needs of carrying electronic devices.

Digital nomads always want to stay connected, so they must carry a means of transport on their body, which will be designed to be in a narrow orientation. The combination of information equipment and accessories such as glasses, watches, and clothes used by humans for a long time can be said to be due to the closeness of existing products to the human body. Lighter and smaller digital devices are made to be carried around like accessories, allowing the human body to function as a mobile space. Eleksen's "sensing fabric" ElekTex reveals the potential of wearable computing as it prepares to revolutionize the field of ergonomics. Lightweight and washable, ElekTex can be hardened to form, covered with a thin layer of other materials, or used to wrap solid forms.

The modern nomadic lifestyle, not trying to settle in one place physically or culturally, especially the blurring of the boundaries between leisure and work, shuttles between virtual and natural spaces, is changing the concept of space. Baek Uk-in (2003) predicts that digitalization will bring home and office work and play together. The office, which once represented the upper and lower floors in the industrial age, is now becoming a place of thought and a space that can flexibly respond to changing needs by moving endlessly (Miok Lee, 2002). In a horizontal relationship, social connection and communication, an alternative office focused on employee interaction, is gradually becoming a reality thanks to advanced digital technology. The concept of everyone's identity space has also changed, becoming a virtual reality place on the Internet instead of a physical space, and with the advent of the Internet society, a new Internet cultural community has emerged. Guaranteed anonymity in computer-mediated virtual spaces, forming new relationships and communities outside the physical space and social status of people with common interests.

4.2
The redefinition of electronic devices

About wearable computers, Kim Hong-ki (1988) argues that all media are extensions of the human mind or body, and clothing is an extension of the skin. Fashion in the digital age represents the body and the digital environment, where the second concept of skin is extended. In addition to increasing the role of digital media as a connecting body, the purpose of sports is achieved by combining it with information equipment. Described in terms of intelligent clothing, smart wear and thinking clothes, thanks to the development of computers, the possibilities of wearable computers include smaller, cheaper, more powerful electronic components, wireless communication and portable (portable) (Quinn, 2002b). Wearable computer refers to a new concept of combining various information equipment with clothing in the digital age. or while moving. Its advantage is that it can send and receive information. Wearable computers are equipped with various devices that integrate with human activities and increase versatility. In particular, wearable computers can perform more diverse functions when connected to a wireless network (Averette, 2003). Levi Strauss collaborated with Philips to create the concept of "Levi®s ICD+" as an electronic product that wears clothes and modern communication technology. Philips developed this technology for ICD+, and Levi® incorporated these technologies into their designs to create a jacket that connects the remote control, headset, GSM phone and MP3 player into the jacket to form a single domain network. Instead of carrying three separate pieces, the wearer can achieve three functions simultaneously with a jacket that integrates these devices (as seen in Figure8).

Philips' Living Coat is a digital garment that can be used to survive in more extreme conditions. It has a built-in GPS to accurately track the wearer's location, providing the wearer's location and longitude, latitude, and forecasting. Techno sock-wear is a sports garment with a built-in satellite navigation system, electronic ski pass function and temperature sensor to protect the body from External hazards and automatically heat the body to a specific temperature when the body temperature falls below. This ensures survival and personal safety through clothing (as seen in Figure9).
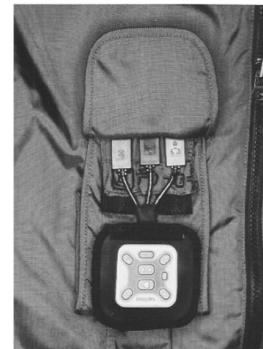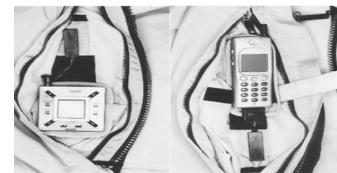

Fig. 8 "Levi®s ICD+" with Philips
Fig .9 Philips' digital Living Coat

4.2
The redefinition of electronic devices

Textile companies such as DuPont are developing electro Textile, a new type of fabric that can let electrical signals and electricity through, and research into these fabrics will lead to electronic clothing that can check body temperature, blood pressure and pulse simply by wearing it. It will. The concept of wearable computers is now moving beyond digital technology into the fashion world. Things such as PDAs, cell phones, etc., have entered the category of general carry-on items and started to be regarded as handbags and fashion accessories, which means that the scope of fashion has expanded. With the advent of wearable computers, the design of information devices will evolve into a completely different aspect from the idea of putting it in a box and will be established as a fashion in its own right. It can be a walking office. In the future, information devices will eliminate the characteristics of simple terminals and create a body network through the human body (Choi Ji-young ° §Gan Ho-seop, 2003) and transcend the horizontal protection and identity symbols that perform existing functions such as the body.

Over the past few decades, it will expand its scope as an extension of human capabilities and functionally developed to a very high level. Nevertheless, as a futuristic garment, more possibilities for wearable electronic devices may be found in the new demands of digital nomadism. It seems to be a new idea to reveal the digital nomadic lifestyle and life philosophy through the decorative effect of electronic devices and the enhancement of aesthetics in appearance.

4.3
Concept of neo-digital nomadism

For contemporary nomads, although the initial motivation and development process is entirely different from those of traditional nomads, the lifestyles pursued by the two groups are highly consistent. If the traits of the two groups are fused, it could give a future digital nomadism a viable possibility.

The future optimized neo-digital nomadism can be obtained through the complementary points of the peripatetic nomadic and digital nomadism groups. If the peripatetic nomad has the electronic expertise of digital nomadism, it can establish a new social status by gaining a foothold in society. Digital nomadism learns the outdoor survivability of Peripatetic nomadic and can switch between different nomadic locations more freely. At the same time, combining the two groups can better promote the equality of men and women in the future society.

From the perspective of the transformation of digital nomads in the digital age, the portability of traditional formal wear and electronic devices has become a critical representative point. Post-pandemic, these new needs appear to be shaping a new kind of digital nomadism. This nomadism can become a new way of life and new ideas while simultaneously adapting to the outdoor natural environment and digital era. At the same time, this nomadism can be equal, efficient and free to exist in the future society.

4.4
Innovation in the national identity of neo-digital nomadism

According to the complementary point of digital nomadism and peripatetic nomadic, if the advantages and disadvantages of the two groups are well compensated, the sense of national identity seems to make the two groups more sticky.

National identity has always been an imperative factor in cultural production such as art and music. In modern times, clothing labels and brand logos often indicate their regions of origins, such as Hermès "Paris", Prada "Milano", or Burberry "London, England", and some fashion brands even include it in their brand names: Pringle of Scotland and Kate Spade New York to name a few. In the case of fashion designers, according to Kawamura, "Labeling and grouping based on their nationality are prevalent in press coverage", and once a new designer emerges in the spotlight, his or her nationality always attracts public attention.11 A recent example is Demna Gvasalia (the founder of Vetements and creative director of Balenciaga since 2015), who brought much attention to Tbilisi in Georgia through his influence and fame. The city was even called a possible new fashion capital simply because it was the designer's origin and also because it is one of the cities that led the 'Post-Soviet Wave.'

American sociologist Fred Davis published the book Fashion, Culture, and Identity in 1992, thoroughly investigating the relationship between fashion and cultural identity. As Davis writes, "that the clothes we wear make a statement is itself a statement that in this age of heightened self-consciousness has virtually become a cliché": clothes are broadly understood as instruments for self-expression. Nevertheless, we are unsure how the statements are conveyed and how others perceive them. Do clothes communicate the identities we aim to convey? In which processes are they communicated? How do we create meanings and connotations to convey in the first place? In the book, Davis carried out investigations to answer these questions and address factors that we unconsciously or subconsciously face regarding fashion and identity, such as identity ambivalence, gender, status, and anti-ism for fashion. Concerning the research area of fashion and identity, Davis paid respect to the works of the early scholars, especially Veblen and Simmel - although he also criticized them for primarily focusing on social class - since they have established an essential principle: "clothing styles and fashions do not mean the same things to all members of a society at the same time and that, because of this, what is worn lends itself easily to a symbolic upholding of class and status boundaries in society".

4.4
Innovation in the national identity of neo-digital nomadism

The relationship between design and national identity is recently researched thoroughly by design historian Javier Gimeno-Martínez, and the research result is well consolidated in his book Design and National Identity (2016). According to Gimeno-Martínez, national identity is generated by cultural phenomena: "nations and nationalism", and therefore, it not only belongs to political contexts but also has a solid relation to the cultural field. Although nationality is a universal concept, and national identity is considered a representative "collective cultural identity", which may partially standardize one's culture and identity regardless of the feelings of the individual, it is not uncommon that there are different understandings of the nationality depending on the individual even within a group where people share a nationality. Gimeno-Martínez explains this: "individual identity can be seen as a 'mosaic', formed by singular pieces of collective identity, each with a given social 'shape'", and therefore, it may differ for each individual.50 He also explains that, for each individual, we have multiple identities, which are often situational and temporal, as we use those identities - "of family, gender, class, region, religion, ethnic group and nation", for instance - depending on the situation.

The ethnic conception of national identity links membership with ancestry, nativity, and religious or cultural custom. (Ha & Jang, 2015). With the help of the social background of national identity, fashion features and features of national identity on fashion was shaped. The features of national identity expressed in fashion were directly and indirectly affected by social background and reflected fashion's features. Under the influence of the general influence of national identity, fashion shows two main features. First is the way people consume fashion as cultural products or commercial products. Second is the attitude and way of adopting traditional ethnic elements in fashion. These elements are the typical representative of national identity.
Therefore, to demonstrate the sense of national identity and belonging, combined with the redefinition of the electronic device and traditional nomadic handicrafts, it is an excellent way to promote the identity of the new digital nomads by using circuit board components to make new digital nomadic totems. The new totem can be used as a cultural product of the new electronic nomadism to carry forward the traditional handicraft technology and the business card of the new nation.

Chapter5
Case studies analysis
key drivers identified for the design project

According to the research on new digital nomadism in the previous article, I conducted a case studies analysis, which consisted of fashion design and digital fashion 4.0 projects and practices having nomadism as the central concept, as well as modular design, wearable electronic devices, national identity innovation, in order to build further explore specific and innovative methods.

5.1
Case studies of nomadic concept in fashion design

Case study1: Nomadic Glamour at Maison Margiela Fall/Winter 2018 runway
"Neo-digital natives," always on the move, dissatisfied with tradition and restriction, are waste-averse and are bundled up against the world. In other words, all the kids in his atelier are continuously in touch electronically. As a result, the iPad in the last backpack and the iPhones attached to ankles and recording the audience are electronic tagging in reverse.

Galliano appears to be drawn to reversals in particular. For a moment, you could play Freud and conjecture that a very beneficial turn of events has brought him to this place where he's furiously wayward imagination is once again breaking forth in full flower. There was a sense of explosive creativity over the collection – no time for buttons or buttonholes, the clothes "just scratched together like you would scratch together a box or parcel" or spontaneously swathed in nylon. Galliano called the fabulous colour palette "technosorbets," pastels printed on foam balanced with glossy oil-spill black. Nevertheless, there was the astonishing, almost alien beauty that is a Galliano calling card in the middle of spontaneous techno-life. Imagine a closet full of Adrian's Hollywood relics launched into space, only to be discovered in the future by a tribe of intergalactic nomads with nothing but imagination, ingenuity, lysergic acid diethylamine, and a trunk of platform shoes to create an ecstatic new reality – to make new memories – from their trove. (as seen in Figure10,11)

Fig. 10 Maison Margiela Fall/Winter 2018 runway
Fig .11 Maison Margiela Fall/Winter 2018 runway

5.1
Case studies of nomadic concept in fashion design

Case study2: Modern Nomads at PRONOUNCE Fall/Winter 2022 runway

PRONOUNCE is a fashion company based in Milan and Shanghai founded in 2016 by Yushan Li and Jun Zhou. The label's latest collection for Fall/Winter 2022 is inspired by the lifestyle of Mongolian nomads and features traditional patterns that symbolize protection. (as seen in Figure12,13)

The collection features colourful and sculpted silhouettes that evoke a sense of feminine elegance. Broad shoulders appear in Tibetan robes and tunic suits, while similar elements take shape in shredded sweaters with flared cuffs. Standouts include wool blanket coats draped in mohair, dressed in metallic embroidery and snakeskin patterns. Meanwhile, jacquard pieces don diamond motifs encased in silk and baby camel. In addition, accessories encompass three-dimensional clutches that pay homage to tank hats from the '80s and bone-shaped necklaces.
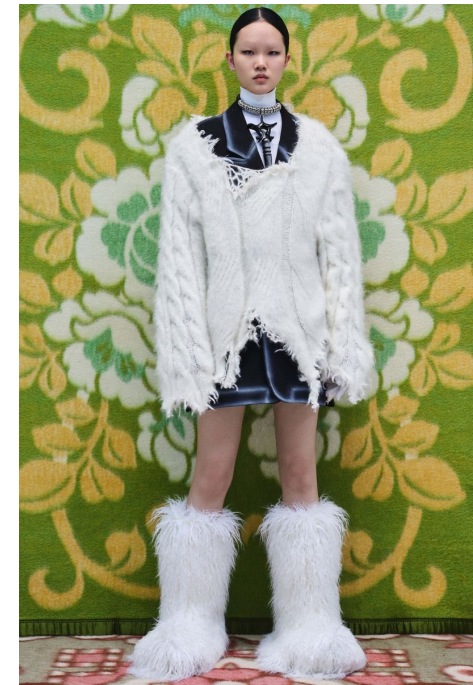

Fig. 12 PRONOUNCE Fall/Winter 2022 runway Fig .13 PRONOUNCE Fall/Winter 2022 runway

5.1
Case studies of nomadic concept in fashion design

Case study3: Poetic evolution of nomadic dressing at Acne Studios Fall/Winter 2022 runway
Acne Studios presents a poetic evolution of nomadic dressing in their Fall/Winter 2022 collection. With the new collection, founder and creative director Jonny Johansson cultivates his interest in clothing language to showcase his interpretation of the nomadic style.

Womenswear garments played denim's natural co-conspirator, leather, via a series of double-breasted trench coats reduced to slit-skirted armless dresses, sometimes over-dyed. Other notable elements included tuft-lined, sometimes-quilted regal blanket dresses in grandma florals, crystal-embedded rib-knit socks over shoes, grungily faded jersey separates, and layered fringed curtain dresses, and repeated returns to the post-Talking Heads boxy blazer in overdyed leather that was another early Acne signature. (as seen in Figure14,15)

Fig. 14 Acne Studios Fall/Winter 2022 Womenswear runway
Fig .15 Acne Studios Fall/Winter 2022 Womenswear runway

5.1
Case studies of nomadic concept in fashion design

Case study3: Poetic evolution of nomadic dressing at Acne Studios Fall/Winter 2022 runway
Menswear garments exhibit a playfulness of both creativity and refinement. Outerwear pieces like overcoats and trench coats in deep blue shades showcase a tailored aesthetic, while knitwear garments are composed using an array of patchwork fabrics. Additionally, collection pieces play with volume and proportion exhibited by pants with billowing mid-leg constructions and relaxed fits. A collection highlight is a relaxed hooded suit in slate grey with a structured blazer, voluminous pants, and grey crushed velvet boots. Complementing the collection looks are leather chap boots in cognac and black, plush knit scarves, silver necklaces and small bags. (as seen in Figure16,17)

The collection, which features an assortment of Earth colours like stone grey, red clay, sea-foam blue, moss green, barnacle brown, and more, is brought to life through a combination of patchwork brocade and fitted styles. Johansson expresses the character and sensations of a constantly expanding approach to clothing by adding a fusion of dress notes.

"I wanted it to be a very poetic collection, with mixed-and-matched pieces that feel lived in for years. Being in isolation has made me realize how much we are used to traveling," said Johansson. "This led me to think about nomadic communities, like those in the north of Sweden near where I grew up. This collection is about how a language of clothing evolves within communities, mixing and contrasting pieces together."

In these three case studies, it can be seen that Maison Margiela's clothing design collection provides new ideas for a whole new group. PRONOUNCE, and Acne Studios are creating for Modern Nomads. This provides confidence in the creation of my neo-digital nomadism.

Fig. 16 Acne Studios Fall/Winter 2022 Menswear runway
Fig .17 Acne Studios Fall/Winter 2022 Menswear runway

5.2
Case studies of modular design

Case Study1: "Modular Cycle" by Chen Weihong
Designer Chen Weihong's graduation work "Modular Cycle" showed a series good fusion of component and geometric modules. As shown in Figure18,19, a body module is a component module based on an ordinary dress, and the module as a skirt decoration is a geometric module removed from the primary form of the garment. The geometric module itself is not fixed. With snap fasteners, it can be a skirt, can be a cloak, can also be a simple decoration. In this series, designers flexibly use several types of modules to achieve component module assembly; such a compromise option presents a different look and expands the modular design potential.

This thesis collection developed from an attempt to solve a problem: waste. Fashion is more developed and celebrated than ever before. Unfortunately, this heinous consumption generates an enormous amount of garbage. Regardless of how environmentally conscious the company attempts to be, it is still a profit-oriented market, which means that one is still attempting to sell more to get a more significant revenue. It produces the same amount of garbage and may consume more resources while seeking to be ecologically friendly. What can be done to entirely resolve this issue or change the infrastructure

of this system is a continual question in my thoughts. Being a fashion designer is no longer just about creating a fantasy; it is also about raising awareness about the ongoing situation and maybe resolving it. This prompted a series of investigations, compartmentalization of garments, and closing technique research to discover new ways of utilizing these garment components and redefine how they might be worn and manufactured. Because of this modular methodology, this seven-look collection can be expanded to a 30-look collection. In the long run, this should help reduce waste in the fashion industry.

Fig. 18 Chen Weihongs' "Modular Cycle"
Fig .19 Chen Weihongs' "Modular Cycle"

5.2
Case studies of modular design

Case Study2: Wearable sculptures by Franz Erhard Walther
Franz Erhard Walther (1939 in Fulda), recipient of the Golden Lion at the 2017 Venice Biennale, is a pivotal player in the departure from the image of the European postwar period. Walther developed an entirely new notion of work that involved the viewer as an actor, going beyond the classical understanding of sculpture and painting.

Walther engaged with the coincidental and the processual design ideas in numerous mediums as early as his early work. (as seen in Figure20) Meanwhile, fabric, which had previously been an unusual creative material, became a source of innovation for Walther, from which the "activation objects" originated. The body became a motif in the pivotal work Four Body Forms (1963). Walther developed the First Work Set between 1963 and 1969, which consists of 58 activatable works that place the observer in exceptional interpersonal scenarios. Walther's breakthrough came in 1969 when he displayed The First Work Set at The Museum of Modern Art in New York as part of the "Spaces" exhibition. Walther's fabrics became more colourful due to Pop Art's impact. He accomplished an unequalled interweaving of painting, sculpture, and architecture in his wall forms of the 1980s, which continues to this day. (as seen in Figure21)
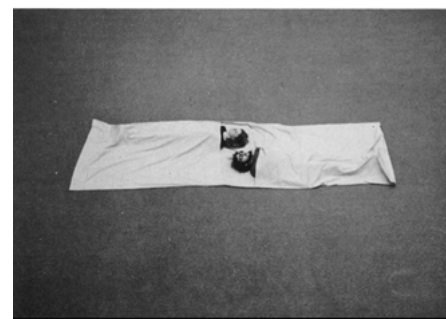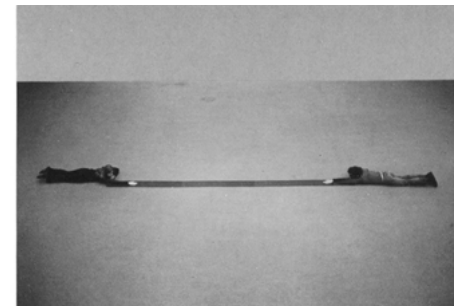

Fig .20 Franz Erhard Walthers' early work

5.2
Case studies of modular design

Case Study2: Wearable sculptures by Franz Erhard Walther
Walther engaged with the coincidental and the processual design ideas in numerous mediums as early as his early work. (as seen in Figure20) Meanwhile, fabric, which had previously been an unusual creative material, became a source of innovation for Walther, from which the "activation objects" originated. The body became a motif in the pivotal work Four Body Forms (1963). Walther developed the First Work Set between 1963 and 1969, which consists of 58 activatable works that place the observer in exceptional interpersonal scenarios. Walther's breakthrough came in 1969 when he displayed The First Work Set at The Museum of Modern Art in New York as part of the "Spaces" exhibition. Walther's fabrics became more colourful due to Pop Art's impact. He accomplished an unequalled interweaving of painting, sculpture, and architecture in his wall forms of the 1980s, which continues to this day. (as seen in Figure21)
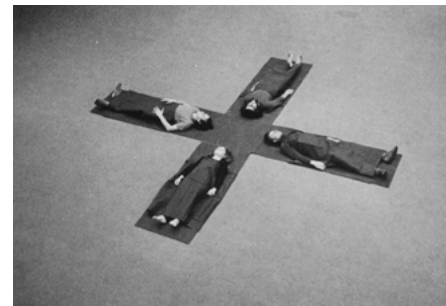
His abstract and geometric fabric sculptures, photographed under the artist's direction in the open air, in the natural but at the same time anonymous setting of a field covered with grass, evoked an abstract and timeless world, where it is possible to imagine bonds with ancient rituals, or with the strategies of Neoplasticism and Minimalism. The images, therefore, mediated his work and the strong interpretation they added to the performances. The static, anonymous, flat grass or hay fields that Walther had chosen as a set recalled the mythological world of metaphysical landscapes
 typical of the films. In many photographs, the
protagonists of the performances were framed
 from the top of a staircase or scaffolding, thus giving
the viewer and photographer a masterful
aerial view of the scene below. The strong contrast of
black and white provided this image
with austerity while also adding existential depth.

Fig .21 Franz Erhard Walthers' fabric sculptures

5.2
Case studies of modular design

Case Study3: KONUNDRUM Explores the Possibilities of Modular Apparel
KONUNDRUM is a German apparel company that specializes in modular jackets and coats. Jan-Philipp Kosfeld and Annika Langhammer, both Central Saint Martins graduates, started the company in 2020 as a forum for new apparel concepts. KONUNDRUM aims to solve the riddle by providing upgradeable outwear that meets the needs of today and tomorrow. THE GARMENT-SYSTEM offers an ever-expanding range of parts with a modular design influenced by architecture theory, the upgradable nature of software, and the timeless efficiency of industrial design. (as seen in Figure22,23)

Customers can purchase purpose-built outwear versions or design their items using the extension library. KONUNDRUM allows customers to participate in the design process by breaking down garments into replaceable components, allowing them to co-create apparel that is particularly fitted to their style and demands. Changes can be quickly done at home using hidden water-repellent zippers, and new parts and editions are issued every quarter.

Fig. 22 KONUNDRUMs' modular jacket
Fig .23 KONUNDRUMs' modular jacket

5.3
Case studies of wearable electronic art

Case study1: Loewe SPRING 2023 MENSWEAR runway
Fashion is on the brink of entering the Metaverse, and our human consciousness may already be intertwined with our digital devices: Jonathan Anderson marked the occasion with a theoretical examination of perception, nature, and progress for his Loewe men's collection. "A fusion of the organic and the fabricated," he called it. (as seen in Figure24,25)
On the one hand, part of his collection was experimenting with cultivating plants onto fabric and garments. Furthermore, on the other: there was Anderson, toying with manipulating tech and his set to make this physical show appear to be a non-real, computer-generated entity when viewed via his live-streamed video and lookbook. "I like this idea of high definition, the idea that you remove everything away from the clothing, and it becomes about silhouette," he said in his backstage debrief.

The ones who strolled down the white, metaverse slope of the set with wraparound masks, or coats and T-shirts implanted with screens broadcasting movies of people kissing, flocks of birds at sunset, tropical fish, flowers, and blinking eyes, were more than that. "When you are sitting on a train or in a cafe, everyone looks at the screen," said Anderson. "And in a weird way, I was fascinated by this idea. What happens when a screen becomes the face?" Pitting nature against tech is not a forward-thinking formula, as far as he sees it: "Maybe out of this through we can find progression somehow."

Fig. 24 Loewe SPRING 2023 MENSWEAR runway
Fig .25 Loewe SPRING 2023 MENSWEAR runway

5.3
Case studies of wearable electronic art

Case study2: Intricate technological mandalas by Leonardo Ulian

Leonardo Ulian composes intricate technological mandalas from electronic components. (as seen in Figure26) He embraces the process of transforming technology systems into artistic innovations. "I am intrigued by the fact that electronic technology has become an important part of our daily life, almost something to worship," the Italian-born, London-based artist describes. His series of 'technological mandalas' is based on this obsession – electronic components of various shapes and colours are soldered together to produce intricate, structured designs reminiscent of Buddhist spiritual symbols. Ulian's ongoing series of 'technical mandalas' reveals the inner workings of our modern systems, portraying electrical circuits as extraordinary objects rather than hidden mechanics. Each component is joined with care to form complicated, artistic arrangements of wires, batteries, and bite-sized apparatuses. 'in reality, my technological mandalas do not function as traditional electronics circuits,' Ulian continues, 'but ideally like ephemeral electronic gizmos, recalling geometries that can trigger the eyes and minds of the viewers with imaginative pictures and thoughts of any sort. I like the idea of a universe made of infinite connections, between people, objects, feelings, states, planets and minds, as the links I develop in my technological mandalas.'
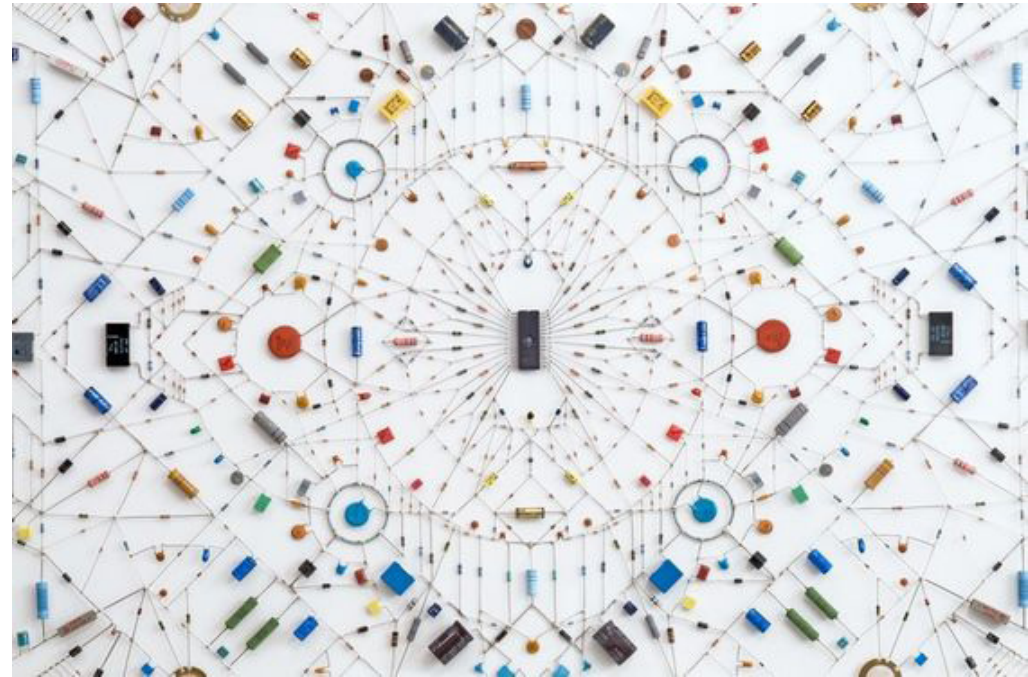

Fig. 26 Leonardo Ulians' Intricate technological mandalas

5.3
Case studies of wearable electronic art

Case Study3: The beauty bots on Instagram
The beauty underground is quietly developing an entirely new army of lovely robots: the beauty bots, thanks to a multitude of futuristic Instagram filters, the emergence of digital avatar influencers, the democratisation of computer-generated imaging, and the advancement of editing tools. The beauty bots are not here to have fun. They push the beauty game to levels humans can only dream of pixel-perfect skin, sensor-activated make-up, micro-chipped eye retinas, and laser-cut features in ultra-HD colours. Even hearts and souls can be 3D printed.
The Instagram account @ravvebeauty is dedicated to showcasing and promoting all that is strange, disarming, and enticing about underground beauty. (as seen in Figure27)
The Ukrainian artist @hannezaruma finds a way to produce amusing artwork inspired by viral online material, tackling the shortcomings of our modern world: from excessive beauty standards and fast fashion to gadget craze and our ignorance of environmental issues. (as seen in Figure28)
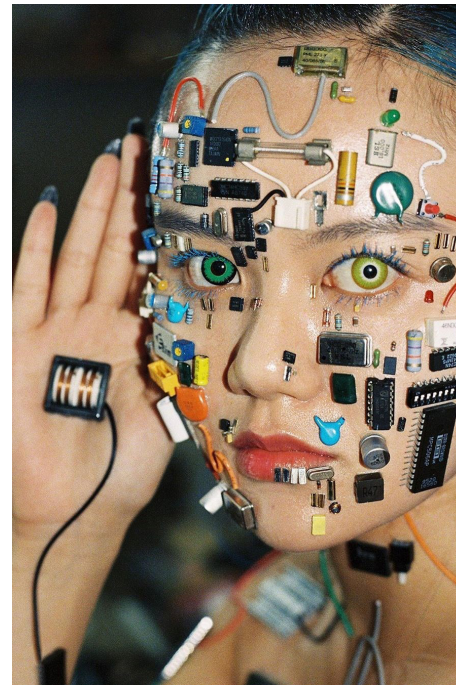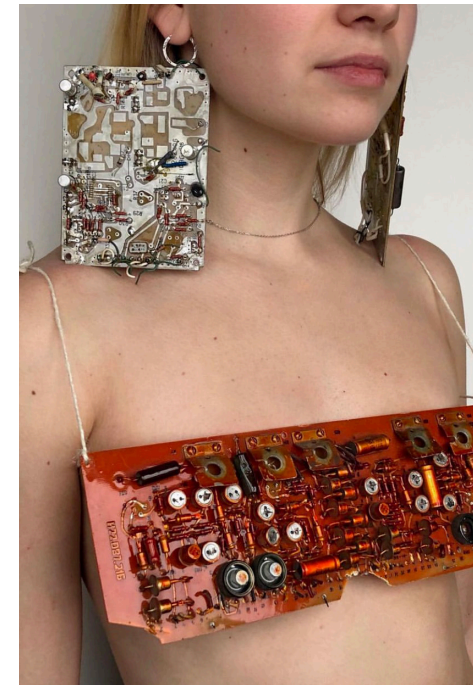

Fig. 27 @ravvebeautys' the beauty bots
Fig .28 @hannezarumas' amusing artwork

5.4
Case study of national identity innovation in fashion design

Yohji Yamamoto and 'Japaneseness'
Toby Slade introduced Japan as "the first non-Western nation to fully engage with euromodernity and the first to develop ways to integrate the Western fashion system into its fashion system based on its indigenous clothing." Occasional linkage of Yamamoto's works to the Japanese primitive aesthetics, such as the kimono, was located in multiple media. This can be explained as a result of national romanticism, an attempt to identify an object with the craft traditions of the designer's nationality, such as folk art and primitivism in design. It is also unveiled that the Japanese government and companies nourished these Western discourses by promoting Japanese fashion to boost apparel export. Moreover, Yamamoto himself encouraged the grouping as a strategy for penetrating the Western fashion industry by debuting simultaneously in Paris with Kawakubo. (Aya Hallberg, 2020)

According to Yamamoto's narrative, the main role of artists is 'to destroy,' for example, existing rules and establishments, and the conventional European aesthetics in fashion were, as multiple studies, and media in the West agree on, the first thing he denied and destroyed in his career as a fashion designer. Yamamoto explains, "I did not mean to fight the West, and just presented what I originally liked. I do not like the conventional Western aesthetic, and I was sure that the European fashion would be more beautiful by breaking it". However, this does not imply that his works are entirely based on Japanese culture or ancestry. Instead, he claimed to be creating his own kind of Western clothing. He said: "When I started to join the Paris fashion week, I was called "Mode Japonais" by the media. I was surprised, as I thought I was making Western clothes in an international style, and I could not understand why I had to be called that. Since I was born in Tokyo and grew up in an area destroyed by war, almost like a ruin, I had no self-image as Japanese, but only as a Tokyo- person. I have never been interested in concepts such as 'roots' or 'identity' either. I thought these things should be found in one's life, not in the country's traditions."

5.4
Case study of national identity innovation in fashion design

Yohji Yamamoto and 'Japaneseness'
Although he is a fashion designer, he claims that he has never focused on fashion itself, instead "destroying mode with his mode," which I read as his 'deconstruction' approach. His deconstructive approach is also apparent in his designs. When he launched his men's line, he refused to wear a suit, a staple of Western men's sartorial culture, and instead designed his version of Western men's wear. His deconstruction could also be directed at his works. As stated in the introduction, he put various taboos on himself when he moved to Paris, one of which was using the kimono or Japanese exoticism in garment design. However, Yamamoto claims that his avant-garde fashion, based on a deconstructive approach to traditional European fashion, which was once considered problematic, began to be embraced and celebrated after some time. It meant that his fashion was no longer deconstructive but rather set a new norm. As a result, to destroy his established style, he broke his taboos and worked on kimono for the Fall/Winter 1994–1995 collection. He limited the width of the materials to conventional kimono width and fitted them as Western clothing, which, unlike kimonos, does not require a laborious dressing method. In other words, he produced a new type of Western clothing by deconstructing traditional Japanese clothing—the fashion of deconstructing design established and enhanced Yamamoto's position in the Western fashion industry. Yamamoto's rapid progress and success as a fashion designer in the West were not only brought by his skills and talent in clothing design but also supported by his identity as Japanese. Therefore, fashion assists one in constructing identity.

5.5
Case studies of digital fashion 4.0

Facing the trend of increasing global popularity of blockchain and cryptocurrency, it is worth noticing that virtual assets like NFTs have become one of the most eye-catching investments on the market with the characteristic of being virtual, making it easy to modify, allowing all kinds of creation. NFT is a form of crypto-asset which uses blockchain to record the ownership status of digital objects, such as images, videos, and text. NFT is likely to be the next transformative invention of the next decade. Consumers today, especially the younger generations, are keen to invest in NFT fashion products. Our thought is confirmed by the brands Balenciaga, Gucci, and Louis Vuitton have already put out their different NFT products. They can be a video game, a runway show, or virtual clothes. NFT gives us a glimpse of the future of this industry. As a virtual asset, it can be created in any form we can think of. The data indicates an enormous increase in searches for NFT products at the end of 2019. This trend is coherent with the continuing development of cryptocurrency. (Qin, W., Rujia, L., Shipping, C., & Qi, W., 2021)

5.5
Case studies of digital fashion 4.0

Case study1: DIGITAL PLATFORM
Digitalax is a comprehensive web3 ecosystem that extensively uses fashion and NFTs as conceptual mediums with profound implications beyond conventional wisdom. The technical protocol underpinning the full suite of mediums, toolings, and markets served is entirely public domain. It is tailor-made to support the rapid creation and distribution of CCO apparel NFTs as the most exemplary means to spread dimensional culture to a world deeply in need of a breakthrough in the full adoption of self-sovereign principles and practices. The Digitalax ecosystem does not limit creating works, designers, or collectors to interact only through general marketplaces and other core features of the protocol. It also serves as a homeport for launching fully open-source and workable Designer Realms. Realms equip designers with the composable tools and infrastructure needed for a comprehensive token economy with native incentive mechanisms, blueprints for immersive storefronts, fair distribution mechanisms, modular supply chain elements and interconnected markets on their custom smart contracts providing the best combination of creative autonomy and strength in numbers. This "many branches, with one shared root system" design pattern brings dimensionality into the protocol layer.

In 2021, Polygon partners with DIGITALAX to bring a hybrid digital-physical fashion line. In the latest collaboration, Polygon has partnered with NFT-based digital fashion project DIGITALAX. The collaboration will see the fashion project release a hybrid digital and physical fashion line. According to the announcement, the idea is centred around NFTs as memes- everyone's 'favourite' way of expressing their feelings. The fashion collection will be sold as a physical piece. At the same time, it will be minted on the Polygon blockchain and sold as an NFT- in this case, a meme. This hybrid digital and physical piece will be both incorruptible and unique. Each meme is designed to promote core themes such as sustainability, exploitation in the supply chain, fashion and gaming, and unrealized creator value. The memetic patches will be minted on Polygon as a unique ERC1155 NFT, using the DIGITALAX open-source digital pattern, material, and texture libraries. Those purchasing physical pieces will receive an inventory claim ticket to claim their unique memetic NFT in an Arkane or Metamask wallet. Here they can receive their memetic NFT introducing them to the world of NFTs and the broader cryptocurrency market. Physical garments can be bought with fiat, opening the market for all.

5.5
Case studies of digital fashion 4.0

Case study2: 3D Fashion Design Studios/ Startups
The Fabricant Studio is a platform in which they create challenges to gather communities of creators. (as seen in Figure29)

Designers attract people to create their personalized NFT, and they purchase the NFT into the Meta. The Studio enables a decentralized fashion chain where everyone can participate and monetize their craft. In the digital sphere, there will be AI weavers, cyber material designers, digital fashion creators, meta tailors, stylists, professional buyers, multilabel retailers or purely fashion fans. The ecosystem will grow decentralized, whereby anybody can define their role and grow their trade. The platform operates on the Flow sustainable blockchain, enjoying secure copyright ownership with the ability to earn cryptocurrency ($FBRC). The copyright ownership and distribution of royalties among all co-creators will be established and guaranteed using NFTs, where every garment will have a unique identifier. Garments are presented in high-definition 3D visualizations, enabled by Unreal Engine. All items for sale in the marketplace are ready to wear in the metaverse.
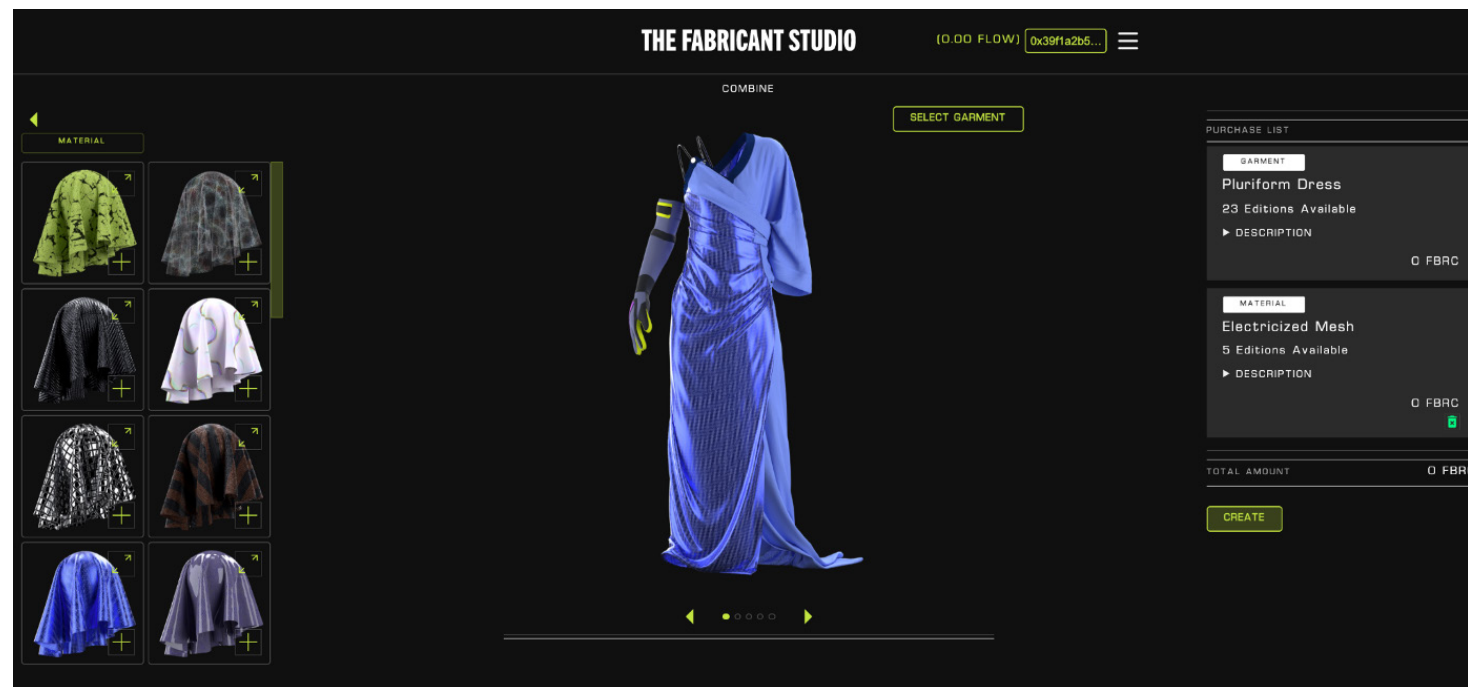

Fig. 29 The Fabricant Studios' personalized NFT website

5.5
Case studies of digital fashion 4.0

Case study2: 3D Fashion Design Studios/ Startups
The Fabricant Studio is a platform in which they create challenges to gather communities of creators. (as seen in Figure30)
Designers attract people to create their personalized NFT, and they purchase the NFT into the Meta. The Studio enables a decentralized fashion chain where everyone can participate and monetize their craft. In the digital sphere, there will be AI weavers, cyber material designers, digital fashion creators, meta tailors, stylists, professional buyers, multilabel retailers or purely fashion fans. The ecosystem will grow decentralized, whereby anybody can define their role and grow their trade. The platform operates on the Flow sustainable blockchain, enjoying secure copyright ownership with the ability to earn cryptocurrency ($FBRC). The copyright ownership and distribution of royalties among all co-creators will be established and guaranteed using NFTs, where every garment will have a unique identifier. Garments are presented in high-definition 3D visualizations, enabled by Unreal Engine. All items for sale in the marketplace are ready to wear in the metaverse.

For example, RenaiXance is a limited edition digital garment collection co-designed by RTFKT x The Fabricant and drops exclusively on The Dematerialized at 20.00 CET, Friday 16th April. (as seen in Figure30) Customers participate in the drop through their site to own, collect and trade the unique RenaiXance collection NFTs. RenaiXance is inspired by the Renaissance period of the 16th century, an era of rapid social and cultural change, but reimagines its spirit and energy for our technological age. RenaiXance asks us to challenge the status quo through the digital world. The collection includes 9 NFTs, each rich with their folklore, based on gaming characters but remixing their aesthetic to correspond to The Fabricant's 'Pluriform' design philosophy. The belief is that fashion should be fluid and genderless - we can express multiple selves and identities in the digital terrain.

Fig. 30 RTFKT x The Fabricants' RenaiXance

5.5
Case studies of digital fashion 4.0

Case study3: GAMES

Zepeto is a freemium social media app that lets users create 3D characters of themselves. (as seen in Figure31) The app requires access to your phone's camera, microphone, and gallery and creates characters by taking new photos. In-app currency is offered as a reward for registration (registering requires an email or connection to Facebook, Google, or WeChat account), and currency is used to buy things in the in-app item shop. You can earn it by playing a straightforward mini-game or buying it with real-world money. Users are encouraged to "discover" and connect with other Zepeto avatars, take photos and videos of their avatars, and share these creations online. It is possible to connect with strangers, but it is also possible to only follow your friends.

In 2021, Ralph Lauren designed a virtual clothing line within Zepeto as the iconic clothing brand moves into selling digital clothing within the metaverse. (as seen in Figure31) It is the first time Ralph Lauren has been selling digital products, including 12 looks with 50 unique items ranging from vintage styles to the brand's summer collection. However, instead of shelling out hundreds of dollars for existing threads, each piece within Zepeto costs 14 to 40 ZEM, the app's digital currency, convertible

to US dollars (a cost currently between $ 0.57 and $ 2.86. depending on the article). At the high end are madras shirts and Polo Bear sweaters, while cheaper products include sunglasses and baseball caps. Ralph Lauren and Zepeto also recreated virtual versions of iconic real-life locations in New York City. Along with a virtual version of the company's flagship store on Madison Avenue and a version of Central Park, Ralph Lauren has created an environment for his brand of Ralph's Coffee and coffee trucks.

Fig. 31 Ralph Lauren x Zepeto

5.6
Key drivers identified for the design project

From case studies of nomadic concepts in fashion design, I think designing a fashion collection for neo-digital nomadism can fully and reasonably demonstrate my ideal concept of future nomads.

From case studies of modular design, it can be seen that modular design provides the advantages of environmental awareness, and it is a very suitable direction to apply to the development of silhouette structure in fashion design.

From case studies of wearable electronic art, I saw that the decoration of electronic devices could also transmit spiritual symbols, which reminds me of the possibility of combining with the display of national identity and applying it to fashion design. The attitudes and effects of wearable technology through an artistic lens alter the contemporary perception of digital apparel towards a more emotive and sensitive state.
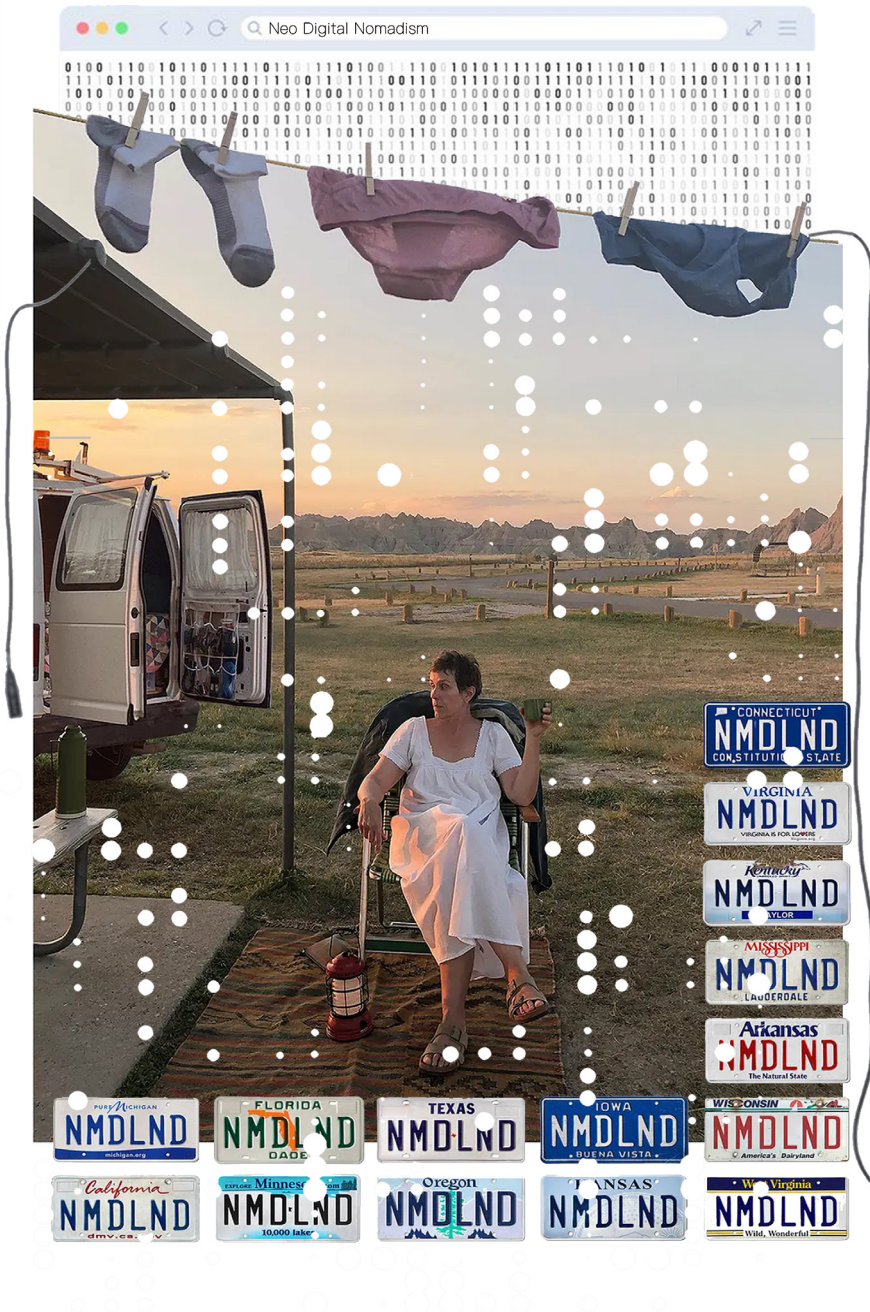
From case studies of digital fashion 4.0, I think The fabricant studio is my best practice for digital fashion. This way can be highly relevant to fashion collections, and the collaboration of fashion design with 3D fashion design studios or startups is my ideal online promotion way.

Chapter6
# The design project: Neo-digital nomadism

6.1
Moodboard

I found much inspiration in Chloé Zhao's film Nomadland, which has a lot of elements I wanted to use, such as the outdoor scenes of modern nomadism. The heroine has always maintained a free emotion on the road and occasionally encounters friends who are nomadic at the same time. These conveyed emotions are what I wanted to build for the neo-digital nomadism, and that is where my concept board came from. However, the film Nomadland lacks the part about using digital in the lifestyle of new digital nomadism, so I collaged the part about digitally based on the screenshot of the movie, which is the ideal neo-digital nomadic lifestyle in my opinion. Stay nomadic, stay connected to the world, and stay free and independent.

6.2
Color Palette

In the above research, I analyzed the traditional nomads wearing white clothes reflecting the sun when resisting the heat and wearing black clothes to absorb body heat. Moreover, for digital nomadism, I discussed what redefines formal wear, and most formal wear is black and white. Based on these, I wanted to use black and white as the leading tone of the whole project.
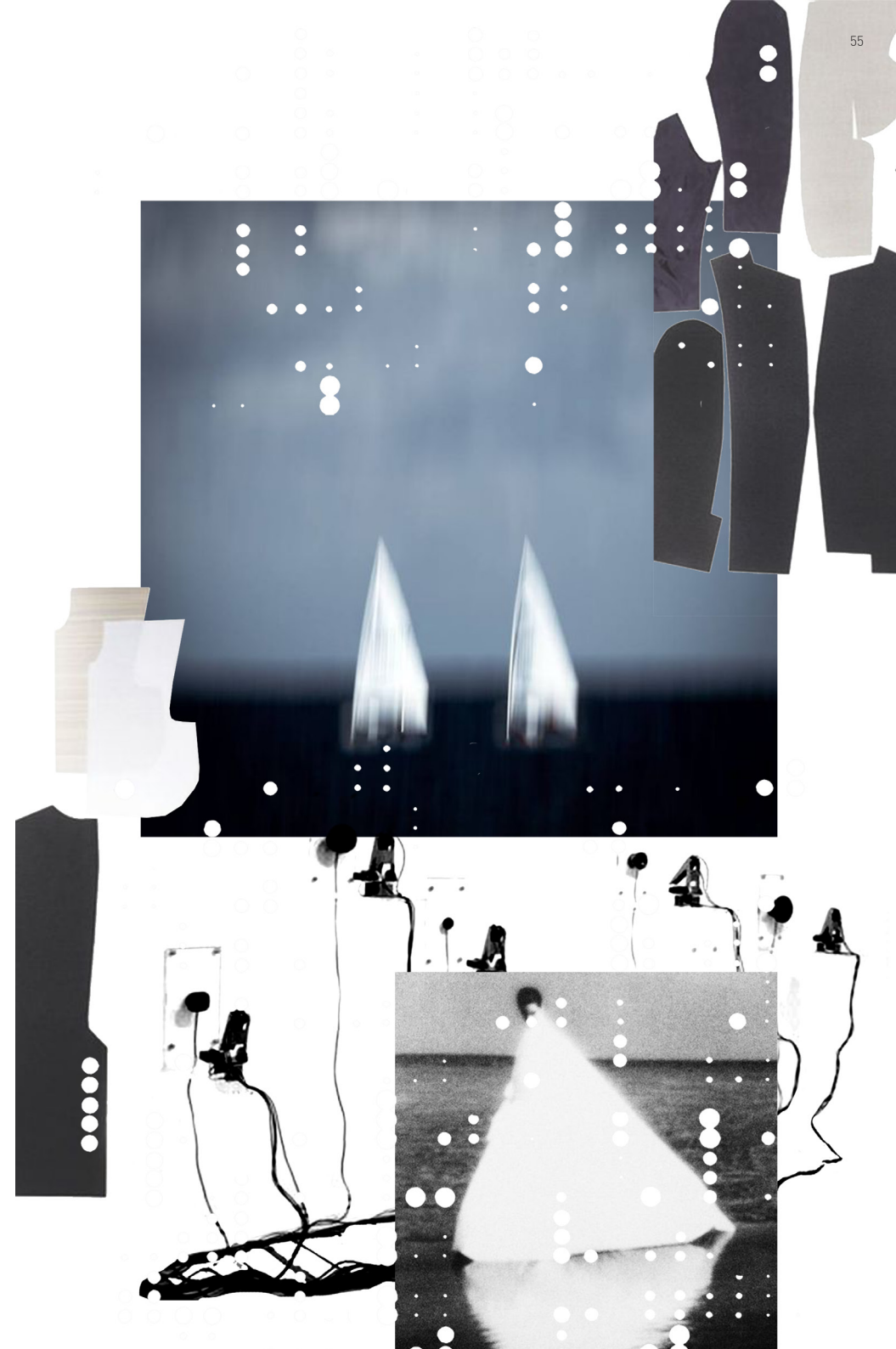
6.3
Silhouette development

Regarding Silhouette development, I used the method of Reverse Engineering to complete the modular design. I do reverse Engineering in two ways: collage and draping to develop silhouettes composed of many small formal garments. The modular, disassembled monolithic garments will be reorganized according to neo-digital nomadism living and working characteristics.
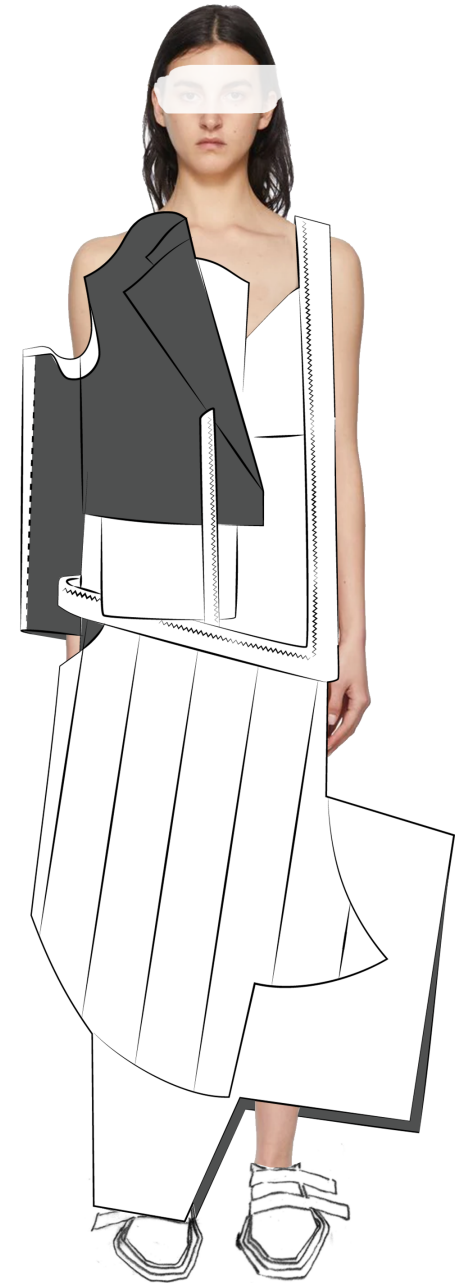
Reverse Engineering 1
I researched the basic formal wear styles, including suit jackets, suit pants, shirts, etc. Then I deconstructed the formal wear into each essential part, disassembled according to the sewing thread, and restored it to the original flat pattern. Then make ten collages in the form of a collage of these flat pattern elements. Then put the flat sticker on the mannequin, and redesign it 2-6 times according to the aesthetics of the human body to form 10 looks. From these, I selected one look like the final design draft.

6.3
Silhouette development
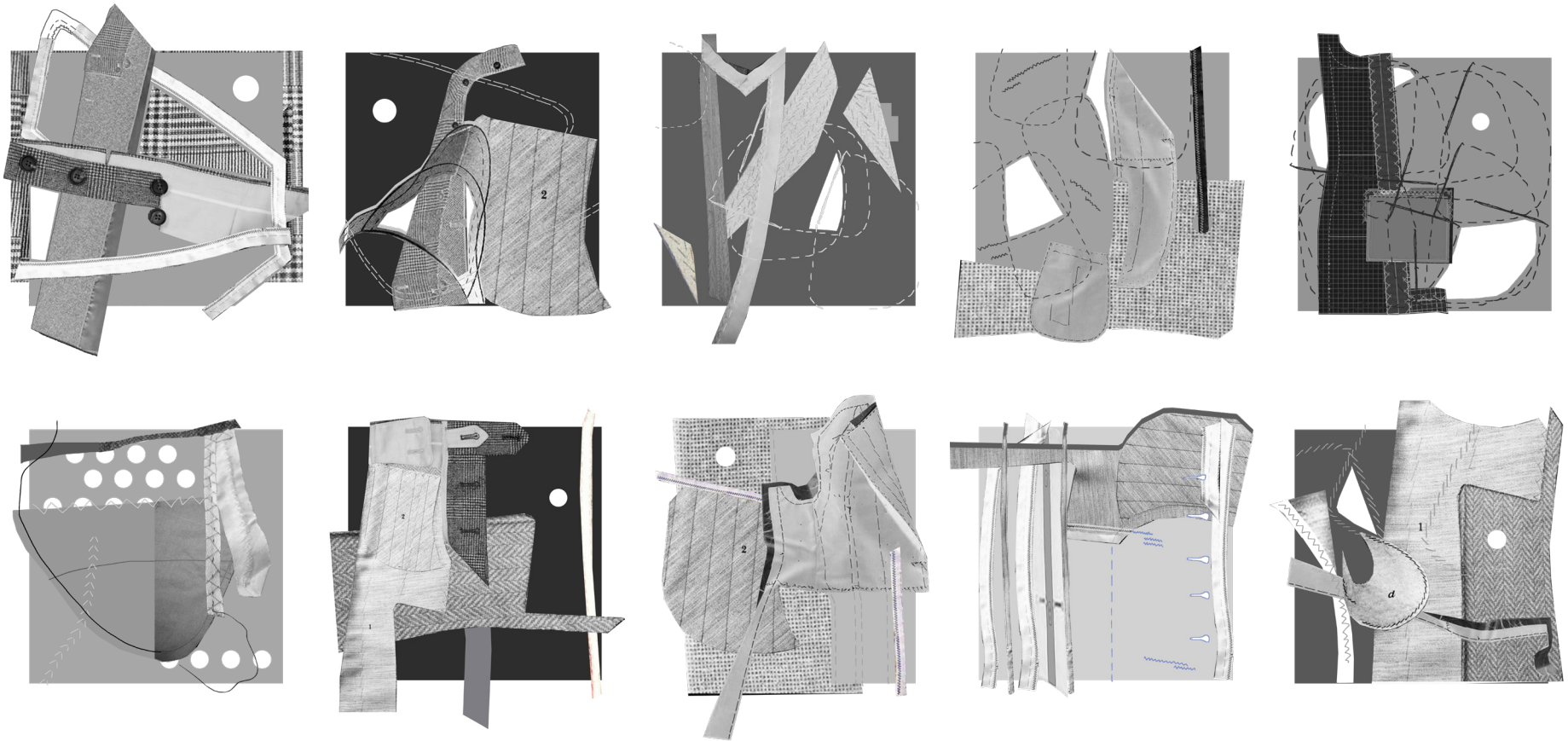
Reverse Engineering 1

6.3
Silhouette development

Reverse Engineering 2
I started with the flat pattern. I used a shirt as an experiment. I disassembled a shirt, reassembled it differently, and then placed it on a mannequin for draping. Through different placements, I got six different tops and two bottoms. Then I carried out the secondary design of the obtained draping and formed six sets of final design drawings.
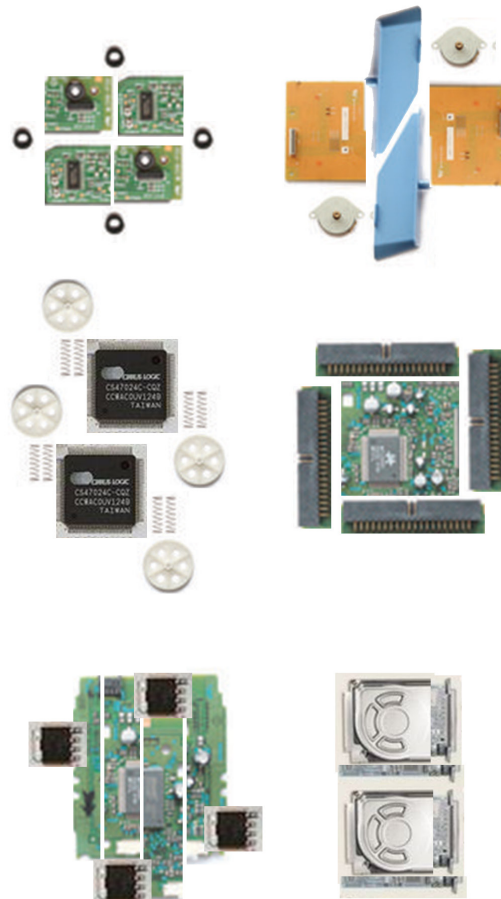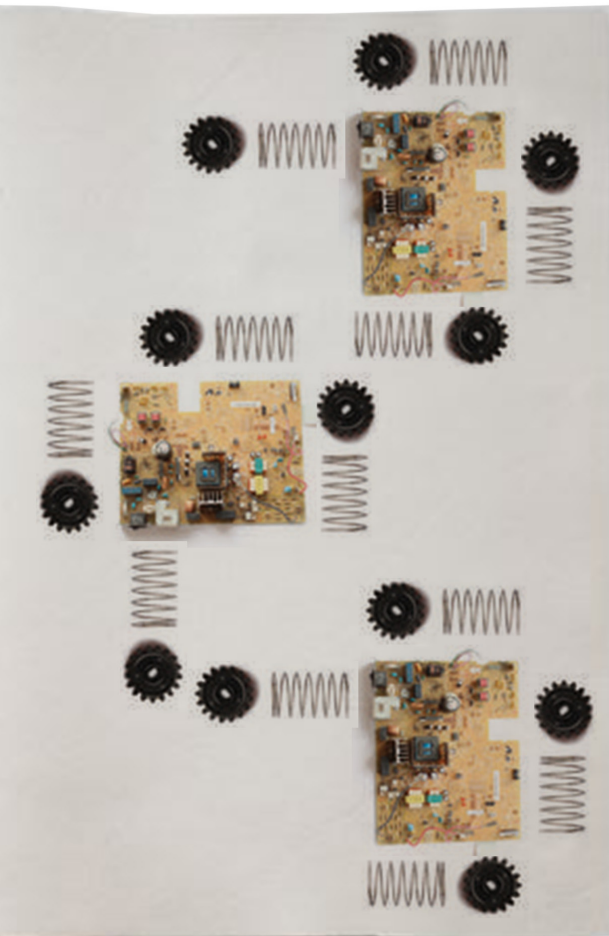
6.3
Silhouette development

Reverse Engineering 2

6.4
Fabric development

For the fabric development part, I will do the aesthetic design of wearable electronic components according to the characteristics and production principle of peripatetic nomadic handicrafts. I found 100 scrapped circuit boards and disassembled the components into small units. Then arrange the fabric according to the handicraft patterns of traditional nomads to get new electronic patterns. The material of the fabric I chose some fabrics that I tried to use in formal wear, such as suit cotton fabric and shirt cotton fabric, to match the concept of the modular design of formal wear.

Accessories development
According to the custom of traditional nomads wearing head covers and other accessories in the above research, I also made accessories design according to the same method of fabric development.

6.5
Line-up
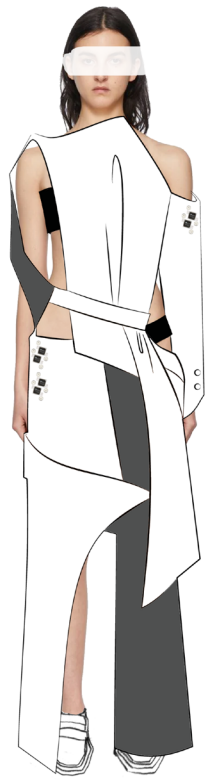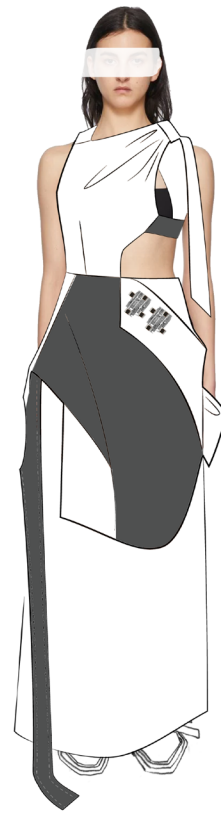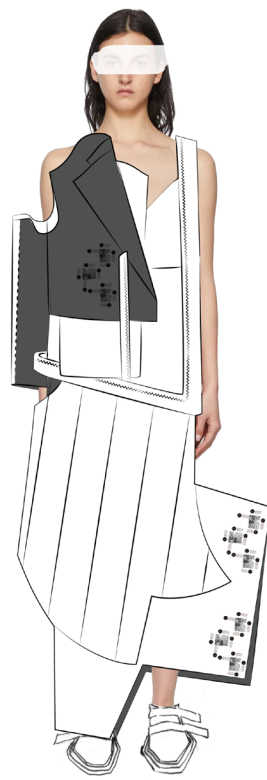
Chapter7
Conclusion
and future developments of the project

7.1
Conclusion of the project

The global epidemic of COVID-19 has accelerated and magnified current tendencies toward remote and flexible work. Digital nomadism has been accelerated and amplified as a subset of these trends. Digital nomads with mobility, speed, and flexible thinking are becoming a new form of human being in the digital era, and their nomadic inclinations are being embraced as cultural characteristics. Fashion design that responds to digital nomadic tendencies is represented by aesthetic transmission and identity type, design so that nomadic features can be taken everywhere. Wearable technology that enables garments to play independently—the function of information technology. The need for mobility is met through clothing. Wearable technology will be further developed with the development of digital technology, more and more people will be able to access it in the future, miniature digital devices will become part of textiles or go to the fashion stage like clothes, accessories, etc. Fashion will be a tool for expanding human capabilities by combining with machines, which means expanding the scope of fashion.

Fashion designs can be transformed into tools to protect and adapt to the human body in a given environment, as well as multifunctional fashion designs that have protective functions to protect the human body from physical and mental threats. Digital nomads are open-minded, interactive media that allow the wearer to follow their ideas. The evolution of modular design aims to complete designs that can be defined as wearer-centred, human-centred designs in the digital age. It is believed that by faithfully fulfilling the roles of producers and consumers and actively participating in the design process, an open design structure will be established in clothing design. The standard of fashion spirit and material value lies in the human body. The future fashions will develop in ways that facilitate human activity and satisfy further nomadic tendencies. For this reason, the development direction of clothing design based on the human body and human body technology, design, and marketing integration can be foreseen. Fashion in the digital age should develop in a people-oriented direction while meeting the nomadic needs of modern people.

7.1
Conclusion of the project

If the design mode of component modular design is to decompose the whole into parts, then the design idea of modular design is to move from the part to the whole and walk between the two. Combined with the examples in this article, it can be seen that modular design is essentially an inclusive design technique. Modules can be disassembled freely, can be disassembled into components, disassembled into geometric modules, or even the continuity of modules; modular design in different seasons; modules are accessible in size and can be disassembled or in detail. It can be said that the space of modular design is enormous. In today's fast-fashion market, how to achieve a balance between environmental protection and fashion through modular design is still worth exploring.

Resulting from modular design and deconstruction techniques that I developed, it reflects the advantage and importance of recycling and upcycling garments. Modular design reduce the apparel risk, recycle costs and add reuse value. Making garments modular can help promote interchangeability, as can using a variety of closures. Consider how to disassemble and reassemble a skirt into a coat, or how to disassemble and reassemble two coats into one. Wearers can constantly experiment and play with their clothes, removing and re-putting pieces based on seasons, situations, or trends. This infinite interchangeability will gradually extend the garment's lifespan in one's closet, allowing it to exist outside of seasons and time periods. Garment can be returned to firms or apparel recycling bodies via various channels instructed in advance. The returned garment is then dissected into various textiles (such as cotton, polyester, hemp, wool, and blended fabrics) and accessories (such as buttons, zippers, snaps, closures, labels, and ornaments) for use in another sourcing and design module. Another point to remember is that returned clothing can be used as second-hand clothing.

7.1
Conclusion of the project

Finally, the concept of neo-digital nomadism as a new way of life in the future makes me look forward to it. I think it will provide some room for understanding the increasing globalization. This decentralized way of working and living can bring some new thinking to globalization. The notion of 'network' has been the conceptual device most widely employed in global studies. Comprising related notions, such as 'flow', 'web' and 'circuit', its prominence in social sciences reflects the impact of information technologies reconfiguring social life as a 'space of flows' rather than a 'space of places' (Castells, 1996). In the case of neo-digital nomadism, the digital part represents the "network", and nomadism symbolizes globalization. Then it can be better understood as the neo-digital nomadism is a combination of decentralization and globalization. If this nomadism can develop steadily in the future, it means that this new way of life can alleviate the anxiety brought about by the acceleration of globalization, and at the same time can balance the instability of emerging industries such as decentralization.

At the same time, in the project part, the development of fabrics provides a new totem for neo-digital nomadism to reflect the national identity, and it plays a role in the cultural heritage of traditional nomads. These forgotten beautiful ethnic patterns can appear in the online world in cutting-edge form. Furthermore, I think it is a viable way for traditional nomads to participate in life in the electronic age, to get paid by designing patterns and uploading them directly to virtual trading platforms. Such a closed-loop economy may not be limited to traditional nomads but provides new ideas for various types of traditional cultures.

7.2
Future development of fashion products 4.0

Demand for newly promoted addresses

Digital nomads promote digital nomadism as a lifestyle through their active online presence, such as personal blogs, books and social media channels. It is portrayed as a happier and more fulfilling life of location-free living and working (Jacobs and Gussekloo 2016). While a more meaningful and happier lifestyle is an integral part of digital nomadism, it is not opposed to work and labour productivity as in the case of global nomads. Digital nomads promote digital nomadism as a lifestyle through their online presence, personal blogs, books and social media channels. It is portrayed as a happier and more fulfilling life of location-free living and working (Jacobs and Gussekloo 2016). However, more research is needed to address this issue in the digital nomadic lifestyle. Korpela (2019) also points out that neo-nomads and lifestyle travellers "seek the company of the like-minded people" in different locations to "spend their time with people who share similar lifestyles and values." This perspective has been gaining support also in studies on digital nomadism. In 1997, Makimoto and Manners predicted the loosening of nationality-based ties that other connections would replace. Co-working spaces, joint nomadic conferences, cruises and other retreats are products developed and sustained by digital nomadism. Emerging hotspots of digital nomads around the world, such as Chiang Mai, Thailand and Bali, Indonesia, that successfully accommodate the needs of lifestyle travellers through co-working and co-living industries are vivid examples of life- style-led destinations that continue to attract more digital nomads (Thompson 2018; Wang et al. 2018).

7.2
Future development of fashion products 4.0

Demand for newly promoted addresses
These deterritorialized communities and supranational forms of togetherness of digital nomads continue the neo-nomadic tradition of anti-sedentarist perspectives towards societies. Lifestyle-based bonding with like-minded people often creates 'communities within communities' in digital nomad destinations. Employing the example of Western lifestyle migrants in India, Korpela (2019) accurately summarizes this trend: "instead of immersing themselves in local cultures, they move within the (Western) bohemian–alternative–space and, rather than being at home everywhere, they are with people who share their lifestyle and values. It is thus not simply migration to a specific place but migration to a specific alternative social scene that exists in various places". Existing empirical evidence on digital nomads supports such segregation between local people and local communities (Thompson 2018, 2019). Wang et al. (2018) suggest a theoretical framing of digital nomadism as a new economic model and a cultural phenomenon. They base this perspective on the new forms of production and consumption performed by digital nomads, such as digital work, digital platforms, and the digitalization of consumed environments. Digital nomads have been developing into a particular subculture of "journeymen" (Wang et al., 2018). They have become a specific customer segment and facilitated the development of new services and products.

Therefore, according to the demand for newly promoted addresses of digital nomadism and the characteristics of this group's online office, I think it is an important and reasonable way to launch virtual fashion, products and online promotion activities through my fashion collection on virtual platforms.

7.2.1
Digital display on the Non-fungible tokens (NFT) trading platform

Due to the worldwide COVID-19 pandemic, people changed their lifestyles tremendously in a way that they suddenly incorporated online working and shopping into daily life and heavily relied on them to function normally. This could provide more opportunities for people to use the internet and connect with the virtual world. In the decentralized app of the metaverse, users can create their own NFTs and display their NFTs and other digital activities. They could also potentially benefit in monetary terms. Although it is still in the very early stage of blockchain technology and NFT to reach more ordinary users, there are clear signs of optimistic hopes (Qin, W., Rujia, L., Shipping, C., & Qi, W., 2021).

According to case studies of digital fashion 4.0, it can be seen that the NFT platform is an excellent promotion platform that is imperative to meet the demand for newly promoted addresses of new digital nomadism. Therefore, I will be launching a custom event on The Fabricant Studio platform (https://www. thefabricant.studio) as The Fabricant Studio is the first who managed to gather a digital community online through products minting. According to the process of The Fabricant Studio website, The first step is to choose clothing styles. I will apply the flexibility of modular design to design various combinations as basic clothing styles. The styles are divided into five levels of complexity. New styles and limited editions are updated every month. Consumers can choose the colour combination of each module, but it is limited to black and white to reflect the neo-digital nomadism style.

At the same time, consumers can make their totem patterns for the new digital nomadism. I will provide the primary lines of traditional nomadic handicraft patterns, as well as a variety of virtual circuit board components. Consumers can first select the pattern they like, select the virtual circuit board components they like, arrange the virtual circuit board components according to the selected pattern, and finally click generate to get a customized fabric pattern, which can then be rendered on the style map of their choice. Finally, consumers can generate their own unique new digital nomadism virtual costume. The price is divided into five grades according to the complexity of the style, the complexity of the customized fabric pattern, and the use area of the customized fabric to generate the final price.

7.2.2
Expand future audiences in Metaverse

As consumers might face the problem that they do not have a proper and virtual space to exhibit the NFTs they possess, it would be apt to create these spaces, which in turn, increase not only the number of interested consumers would increase but also customer loyalty could be enhanced (Qin, W., Rujia, L., Shipping, C., & Qi, W., 2021). Consumers would be more likely to purchase their products and display their NFT collection in the gallery for viewing and exhibition if engineers could design virtual gallery spaces that are integrated into the platforms and website. Consumers can freely share their ideas and comments on those galleries, and we will have the opportunity to use this feedback for future developments. It may indicate that NFT products, including their features and additional applications, will continue to grow in the future. Because virtual reality has significant potential, the function of the NFT will be essential in the future because it consists of virtual items and can attract more and more people, and based on people's imagination, they can develop endless minds and do activities to fulfil themselves. Moreover, thanks to the Blockchain sale system, the NFT will grow in various areas and play an essential role in the future.

Today, the Metaverse exists with digital goods like NFTs representing popular art and digital memorabilia already being lapped up by investors and crypto fans. With the development of technology, the Metaverse will become more popular, and the audience will be more diverse and younger. Through the digital display in The Fabricant Studio, I think the new digital nomadism can be derived into more Metaverse fields, such as putting iconic clothing into Zepeto, applying the concept to virtual games, collaborating with other brands in the Metaverse, etc.

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