

# Design of a mini collection of shoes and fashion accessories

## Dizajn mini kolekcije obuće i modnih dodataka

Professional paper / Stručni rad

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### Abstract

This paper summarizes the development and creation process of the author's Suprematism-inspired mini-collection of shoes and fashion accessories. During the design process, the focus was on creating conceptual solutions from several components in order to reduce the consumption of materials and the possibility of applying the "upcycling" method, i.e. the creative use of leather production scraps in the realization of the model. The experimental part of the work describes the development of prototypes of women's sneakers, boots and backpacks from conceptual solutions, project drawings and the selection of materials for production to model making and the production of templates. Through the use of digital tools, realistic representations of the future models were created. From all these models, the most attractive and suitable for the production of prototypes were selected. As a result, the author's mini-collection of boots, sneakers and backpacks is presented, focusing on design, functionality and quality, as well as the possibility of a longer product life and use according to the guidelines of sustainable fashion.

**Keywords:** shoe design; sustainable fashion; upcycling; fashion accessories; model development

### Sažetak

U radu je sažeto prikazan proces dizajniranja, od ideje do realizacije, autorske mini kolekcije obuće i modnih dodataka inspiriranih umjetničkim pokretom suprematizam. U samom procesu dizajniranja posebna pozornost bila je upućena ka osmišljavanju idejnih rješenja iz više sastavnih dijelova s ciljem manjeg utroška materijala i mogućnosti primjene „upcycling“ metode, odnosno kreativne upotrebe proizvodnih ostataka kože u realizaciji modela. Eksperimentalni dio rada opisuje razvoj prototipa ženskih tenisica, gležnjača i ruksaka od idejnih rješenja, projektnih crteža, odabira materijala za izradu, do konstrukcije modela te izrade šablona. Primjenom digitalnih alata izrađeni su realistični prikazi budućih modela temeljem kojih su odabrani najatraktivniji i najprikladniji za izradu prototipa. U rezultatima rada prikazana je autorska mini kolekcija ženskih gležnjača, tenisica i ruksaka, s primarnim naglaskom na dizajn, funkcionalnost i kvalitetu te mogućnost dužeg vijeka trajanja i primjene u skladu sa smjernicama održive mode.

**Ključne riječi:** dizajn obuće; održiva moda; upcycling; modni dodaci; razvoj modela

## 1. Introduction

Shoes and fashion accessories are an integral part of clothing combinations. As functional and esthetic accessories, they complete and characterize a particular fashion expression, style or outfit. Shoes differ in their type, purpose, cut, method of manufacture or the materials from which they are made. Shoes, boots, ankle boots, sandals, flip-flops, high-heeled shoes (heels), or sneakers are just a few examples of the basic types of footwear [1]. Sneakers, once exclusively athletic shoes, have outgrown their original function and become a cultural symbol of our time [2]. In addition to casual and informal occasions, they have also become socially acceptable for formal (elegant) occasions in the last decade [3]. Fashion accessories include a large group of items that form an integral part of clothing, such as shoes, headwear, gloves, scarves, belts, socks, and products for specific purposes; bags, backpacks, eyewear, umbrellas, jewelry, and other items that complement a person's final look or styling [4]. This paper presents a mini-collection of fashion accessories inspired by the Suprematism art movement, i.e. the works of Kazimir Maljević. Due to

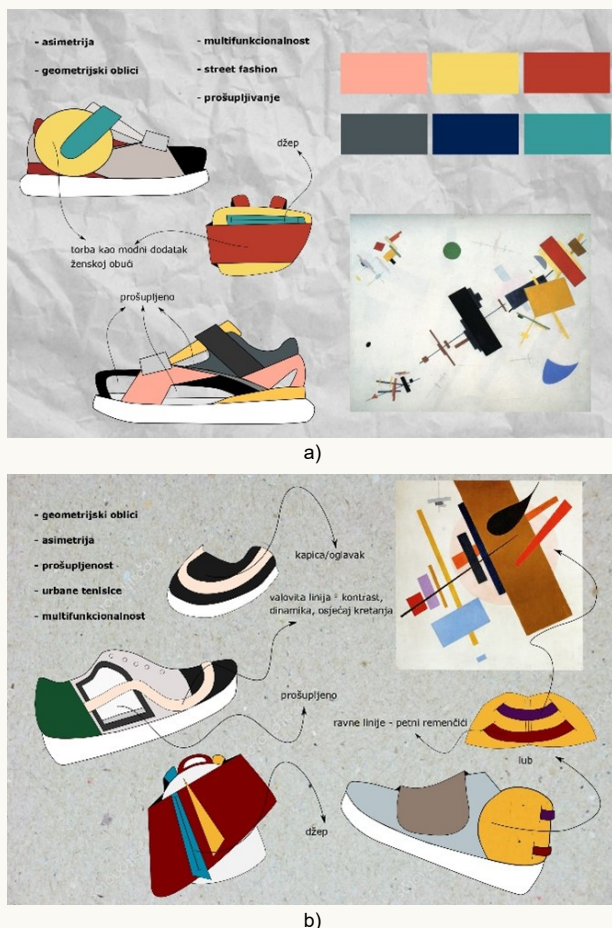
the current popularity and representation on the market, sneakers, ankle boots and backpacks were selected for the realization of prototypes of shoes and fashion accessories using the upcycling method, following the concepts of sustainable development, i.e. sustainable fashion guidelines. Contemporary or fast fashion and the unsustainable production of textiles, clothing and footwear have catapulted the fashion industry to the top of the list of major polluters; from the sourcing and processing of raw materials through production, distribution, use and final disposal [5]. Due to irreversible environmental damage in the form of large amounts of harmful gasses, chemicals, effluents, and waste in general, sustainability is being recognized as an important issue in the fashion industry, and the demand for environmentally sustainable products is increasing. One of the ways to create sustainable or slow fashion is the upcycling method. The term upcycling was introduced as a better solution than recycling and refers to the creative transformation of production surplus such as leather, textiles and other materials or the reuse of discarded or used clothing with the primary goal of waste reduction [6].

## 2. Experimental part

In the experimental part of the work, the process of designing shoes and fashion accessories is presented and visually documented - from the conception, design and development of conceptual solutions to the development of prototypes of women's boots and tennis shoes and two models of backpacks, including construction and modeling, material selection and creation of templates.

### 2.1. Concept design

The development of the model begins with the process of collecting ideas, which are summarised in the form of a concept design. Concept design is the first image or sketch for the design of a future product and is used in all areas of product design or artistic creativity [7]. It shows the conceptual reflection of the visual and functional segments of the future product based on the selected inspiration. The concept of this collection was inspired by the asymmetrical compositions of Kazimir Maljević, Supremus no. 56 and Suprematism of 1916 (Figure 1). Geometric shapes, regular and irregular, straight and curved lines, and contrasting and bright colours provided the impetus for decorative and functional details in the design of the footwear and fashion accessories collection.



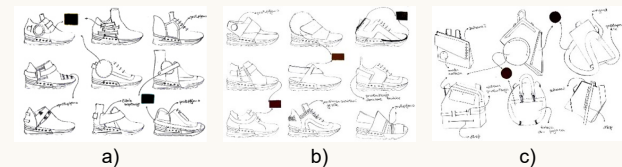
**Figure 1.** Conceptual design based on the work of K. Maljević: a) Supremus no. 56 and b) Suprematism 1916 [8].

The presented works were created with the computer vector programme Inkscape because it allows faster creation time, easy and fast corrections and a clear visual presentation.

### 2.2. Conceptual solutions in the collection of fashion accessories

Through a creative play with angular and round shapes, straight and curved lines, the alternation of regular and irregular rhythm, the first

sketches for different types of women's shoes from ankle boots, shoes, tennis shoes to sandals were created, which are shown in Figure 2a and 2b. The basic guideline in designing the bags was a combination of straight and curved lines, along with regular geometric shapes and asymmetrical composition. Due to its current popularity and presence in all fashion styles, the multifunctional backpacks shown in Figure 2c were designed. The motif of the circle appears as a decorative or functional detail of the composition or as the basic shape of the backpack alongside angular and regular shapes, mostly trapezoidal.



**Figure 2.** Concept sketches for the shoe and backpack collection: a) and b) different types of shoes and c), backpacks [8].

By following out individual cut pieces and threading straps and stripes on different cut pieces of the top, we wanted to achieve the dynamics characteristic of the chosen charm. An attempt was also made to combine cut pieces and appliqués of smaller sizes and dimensions in order to realize the model according to the method of "upcycling". Figure 3 shows conceptual solutions for different types of women's shoes.



**Figure 3.** Conceptual solutions for different types of women's shoes [8].

### 2.3. Development of a mini collection of women's shoes and backpacks

In order to make the whole collection as attractive and comprehensive as possible, the realization of sneaker and belt bag prototypes and multifunctional backpacks, coordinated with the design of the related shoe prototype, is planned as a set. The choice falls on the traditional and still most appreciated material in the footwear and haberdashery industry - leather. Figure 4a shows leather samples in different colors, textures and types for the prototype tennis shoes and backpack No. 1, and Figure 4b for the prototype ankle boots and backpack No. 2 in Figure 4b.



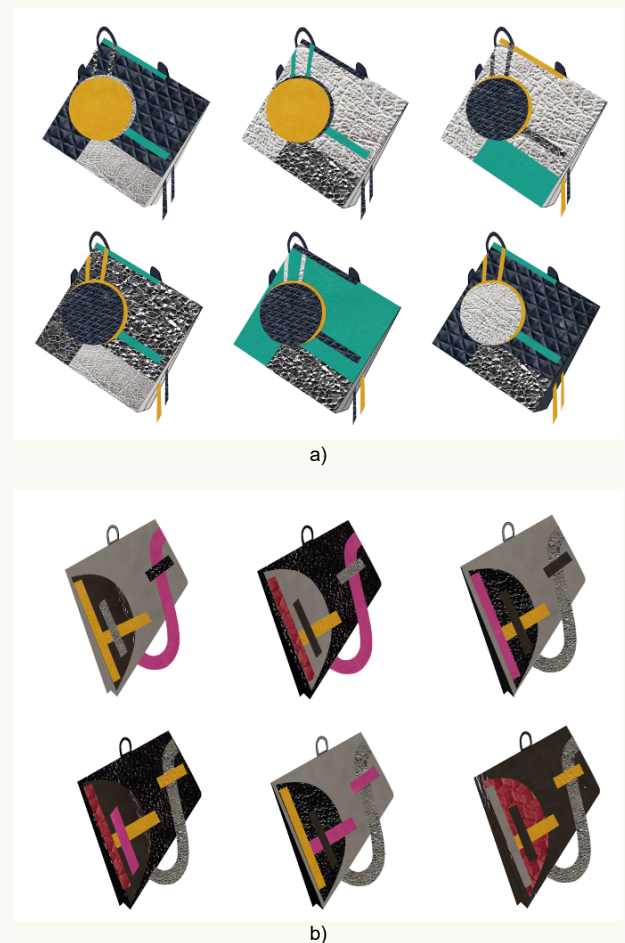
**Figure 4.** Leather samples: a) for sneaker and backpack No. 1 and b) for ankle boot and backpack No. 2 [8].

Based on the selected materials, the possible colour combinations of the materials on the different cut pieces were carried out. Since seven materials were combined in different colours and textures, only some of the possible combinations are shown (Figures 5 and 6). The attractiveness of the ankle boot is emphasised by the dominant yellow circle on the outer part of the saree. To maintain the asymmetry on the cut parts of the front and back of the shoe, an asymmetrical jewellery insert in different colour combinations was added to the left and right ankle boots (Figure 5b).



**Figure 5.** Development of selected conceptual solutions for shoes by color: a) tennis shoes and b) ankle boots [8].

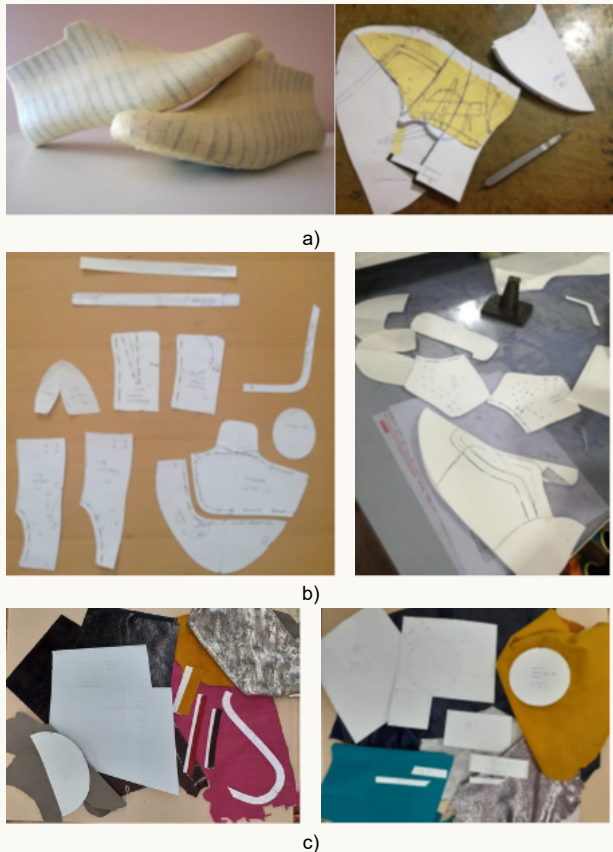
In the sneaker prototype, the asymmetry is additionally emphasised by the different distribution of the material combinations on the cut parts of the left and right sneaker (Figure 5a).



**Figure 6.** Colour evolution of selected conceptual solutions of backpacks: a) backpack No. 1 and b) backpack No. 2 [8].

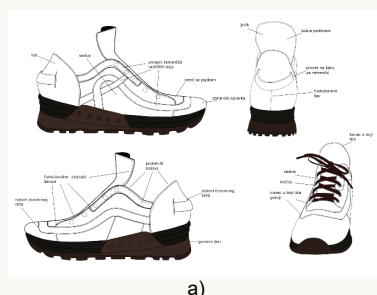
### 2.4. Construction and modeling of a mini collection of fashion accessories

According to the chosen solutions for the realisation of the planned mini-collection of fashion accessories, a shape with the appropriate sole is selected for the shoe prototypes. The sole is an important part of the footwear, and its shape, size and colour significantly affect both the aesthetic appearance and comfort of the shoe. A brown sole with copper-brown details and a dark brown sole was chosen for the tennis shoes prototype, while the same model with a white sole, grey linear details and a brown sole was chosen for the ankle boots prototype.

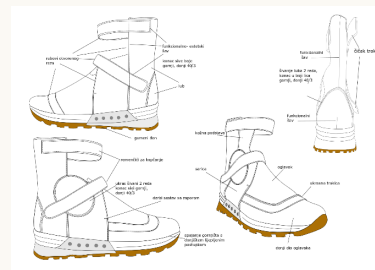


**Figure 7.** Construction and modeling of a mini collection of fashion accessories: a) adhesive molds, construction and modeling of ankle boots b) templates with technological markings of women's boots and women's sneakers c) finished templates and preparation for tailoring backpack No. 1 and No. 2 [8].

After the design, the next step was to make the project drawing. The project drawing is a precise, clear technical drawing presented from several angles (external and internal profile, front and back) with an accurately presented idea; the drawing defines the cut parts, all auxiliary materials and connection methods with additional technological information. It represents the basic communication of the whole team during the preparation and creation of the prototype. Figure 8a shows a project drawing of a tennis shoe prototype and Figure 8b a women's ankle boots.



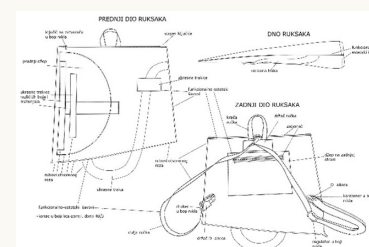
a)



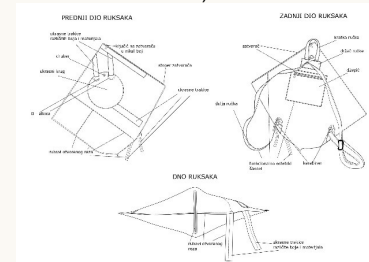
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**Figure 8.** Design drawings of the prototype of women's shoes: a) tennis shoes and b) ankle boots [8].

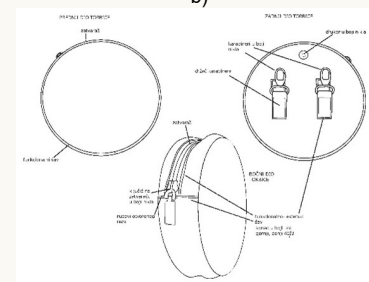
The project drawings for the backpack are shown in Figure 9. For the realization of the multifunctional backpack No. 2, a belt was designed that also offers the possibility of adding a small round bag that is detachable from the backpack (Figure 9d) and can be used as an independent fashion accessory, which is also shown in Figure 9c.



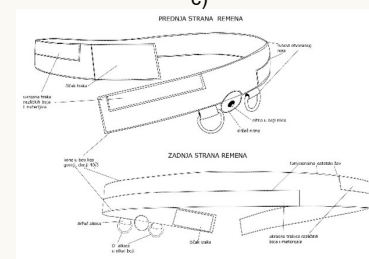
a)



b)



c)



d)

**Figure 9.** Project drawings of the backpack prototype: a) backpack No. 1 b) backpack No. 2 c) a small round detachable pocket and d) a belt with metal buckles to hang a small pocket [8].

### 3. Results

The process of developing a mini-collection of fashion accessories is followed by production in industrial steps such as tailoring, sewing, assembly and finishing. The finished prototypes of sneakers, ankle boots, and backpacks can be seen in Figure 10.

### 4. Conclusions

The finished functional mini-collection of women's shoes and fashion accessories has an attractive design and consists of four prototypes that were industrially produced and went through all stages and procedures from the initial design concept to the overall development and final product. The main challenge in applying the "upcycling" method was the selection of leather scraps and their matching with the planned segments and combinations of contrasting colors. During production, certain elements were corrected according to the dimensions of the available materials. However, the goal was achieved - the design of the author's collection in accordance with the guidelines of sustainable fashion.



Figure 10. Finished prototypes of sneakers, boots and backpacks [8].

### References

- [1] Fashionary: Shoe design, A Handbook for Footwear Designers, Fashionary International Ltd 2016, 5-9
- [2] Kutnjak-Mravlinčić S. et. al.: Tennis shoe - shoe of the twentieth century, Proceedings Complementarity of science, technology and design, 10th scientific-expert conference textile science and economy, Glogar M. I. (ed.), Faculty of Textiles and Technology, University of Zagreb, Zagreb 2017, 147-151
- [3] <https://www.fastcompany.com/90637534/how-sneakers-became-a-79-billion-business-and-an-undisputed-cultural-symbol-for-our-times>, Accessed: 2022-12-5
- [4] Donnanno. A.: La tecnica deo modelli accessori moda, Ikon Editrice, Milano 2012, 5-7
- [5] Gardett M.A.; Torres A.L.: Sustainability in Fashion and Textiles Values, Design, Production and Consumption, Taylor & Francis 2013
- [6] <https://www.ncreators.org/upcycling-for-a-better-world>, Accessed: 2022-12-8
- [7] Motawi, W.: How shoes are made: A Behind the Scenes Look at a Real Sneaker Factory, Kindle Edition 2017
- [8] Makšan, M.: Design of a collection of women's shoes and fashion accessories inspired by supremantism, Final paper, Faculty of Textile Technology, University of Zagreb, Study in Varaždin, Varaždin 2020

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