

Exploratory study of software resources used for analysis of motifs from Bulgarian national folk costume

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Received: June 06, 2018; Accepted: June 22, 2018; Published: June 26, 2018

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Introduction

Software products are available through which motifs of visual images of folk costumes can be converted into a vector format suitable for making them on knitting and embroidery machines [1].

In order to reach the final decision - which elements are to be embedded in modern clothing and textiles - a number of steps are sometimes required, which are challenging the designer - studying fashion trends, finding appropriate items that have not been applied by others to new clothes and textile designs are proposed to be attractive to the consumer and competitive in the over-stretched fabric and garment market [3].

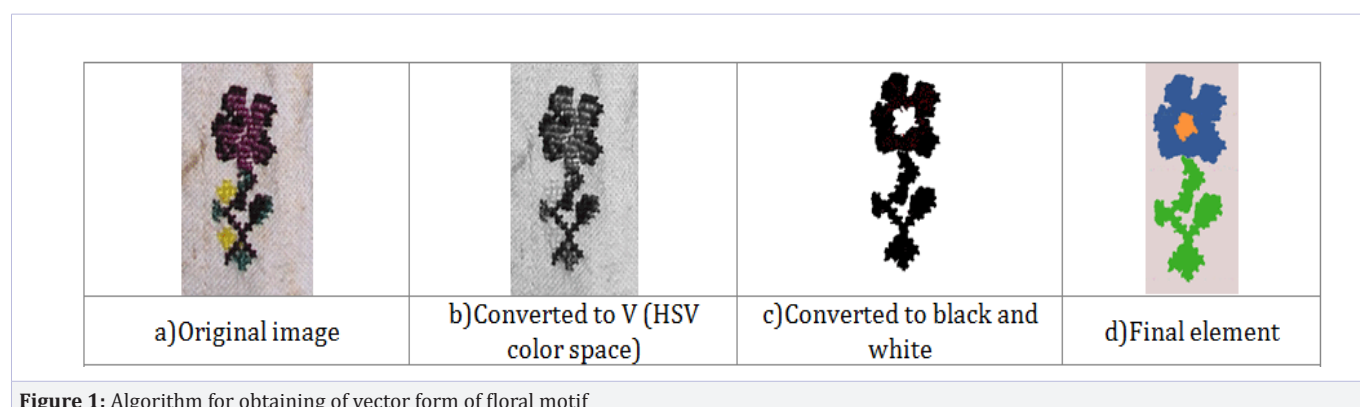
To support this activity, software products and algorithms for analysis of colors and shapes have been developed and tested [1].

An algorithm was proposed in present work for obtaining elements of folk costume, suitable for conducting surveys in their application of modern textiles.

Algorithm for obtaining vector elements and colors from motif images of Bulgarian folk costume

The steps of the proposed algorithm for obtaining vector elements are shown in Figure 1. The original image is represented by a V (HSV) color component after that it is converted to binary. After extracting the contours it can be colored in an automated manner depending on the selected colors according to designer requirements. The motives can be described by coefficients such as shape, eccentricity, orientation, density. These coefficients can be used as objective criteria for the analysis of consumer opinion when selecting elements proposed by the designer. (Figure 1)

Figure 2 shows the function of the algorithm for obtaining and displaying colors from folk elements in Lab color space. The colors in the image are reduced to 5 and represented in a three dimensional coordinate system. In the example presented, mainly contrasting colors are observed. (Figure 2)



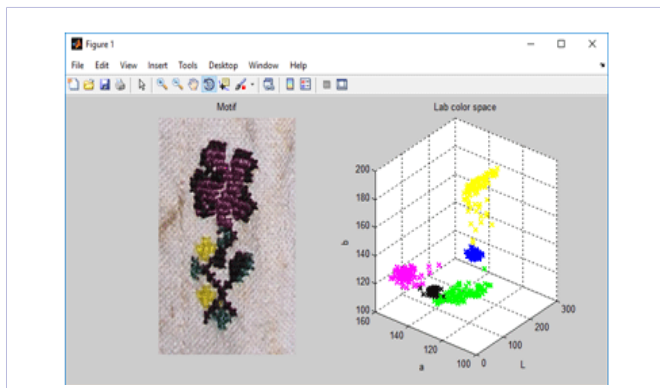


Figure 2: Color representation of motif in Lab color space

Survey with application of the developed algorithm

A survey was conducted using data for 30 floral motifs from the Bulgarian folk costume. Density, orientation, shape, eccentricity and colors are determined.

The opinion of 72 respondents from Bulgaria was analyzed without taking into account gender, age, education. The survey results show that consumers prefer elements with a low 40-60% density and a high 80-100% coefficient of form to be combined with kinship or contrasting colors, and the other

selected ornaments - with kin-contrasting colors. Red and yellow combinations are not preferred by users, but preferred are blue, green or blue and green gamut.

Conclusion

In the present work is proposed an algorithm for obtaining colors and shapes of elements from the Bulgarian folk costume.

The algorithm has the advantage over traditional methods that the results of element representation through their color components and form can be applied in surveys and used to directly compare users' opinion.

The results of the proposed algorithm have been applied in a survey that proved its effectiveness.

References

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