

Motif Placement on Garment Pattern: Comparison and Development of a CAD Tool

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Abstract: Clothing is not only used to cover the body but is also a part and parcel of decoration as it includes painting, dyeing, printing and embroidery. Embroidery is one of the oldest forms of surface ornamentation of fabrics and garments. Embroidery is like ornamentation which gives elegance and grace to a piece of clothing. It is an art of beautiful drawing, harmonious color and elaborate needle skill. The embroideries in India are many and varied. The word 'motif designing' refers to the total composition of lines, forms, colours, shapes and textures in a decorative manner. Technological advancements have brought computer aided designing system in all the areas including textile and garment industry. Five motif designs suitable for clothes such as 'salwar', 'dupatta', and skirt are developed in 2D and 3D software and by using C++ programming. The integration of motif with clothes are presented by combining preferred motifs of different categories on the basis of visualization of designs suitable for cloth.

Keywords: Motif, C++ programming, Reach Fashion Studio, Corel Draw

1. INTRODUCTION

Design is done in response to a challenge, a problem, or a set of requirements. The final act of design is communicated to others through sketches, drawings, formulae, computer programmers or models. Thus we may call design a creative problem solving activity within the set of constraints.

Several excellent examples of beautiful embroidery work/motif are still surviving till date. Samples can be found from Ancient Egypt, China, Persia, India and England. Style of embroidery incorporates the culture and imagery from history and tradition of every country [1].

The knowledge and skill in each area is necessary. Designing is thus a process of seeking a match between a set of requirements and ways of meeting them. Design is most effective when it is 'creative' or unusual and surprising. In effect, we do a lot of designing, whatever our role of life, even though we do not think in those terms. Layout in a pattern is described as the arrangement of the motif, whether it is spaced widely or closely on the ground, in neat order or apparently at random, or in rows that form stripes. Designing is a creative/technical process that is dependent upon the ability of

the designer to combine aesthetic sensibility with a strong knowledge of the technology. Computers have been utilized in designing for almost 25 years and have revolutionized the entire thought process from the initial artwork to final production. [2]. The use of computers has opened up remarkable opportunities for innovative designs, improved productivity as per the changing lead time in fashion industry. As CAD software's not only help in producing a design but also provide easy tools to make changes as per the requirements, thus, reducing time and energy used [3].

RESULTS AND DISCUSSION

Five motif designs suitable for clothes such as 'salwar', 'dupatta', 'skirt' are developed in 2D and 3D software and by using C++ programming. The integration of motif with clothes are presented by combining preferred motifs of different categories on the basis of visualization of designs suitable for cloth. These developed designs can also be used for home furnishing articles, as such or with slight modifications. This effort might help in producing textile items of greater demand in market both at national and international levels. The study is undertaken to add new and interesting ideas, which can break monotony and give a touch of novelty in construction of

garments by using the tantric motifs. The garments developed with motifs in different color were marketable and will be liked by the designers.

2.1 DEVELOPMENT OF ALGORITHM AND PROGRAMMING FOR EMBROIDERY MOTIF DESIGNING AND PATTERN MAKING

Algorithms for embroidery motif designing and pattern making has been developed. In the present work algorithm for full circular skirt and for integrating with concentrated motif are formulated and described herein below. The remaining motif's algorithm can be created on the same pattern as of the first two.

Algorithm-

1. Take waist measurement and add two inches then divide that number by 6.28. Write that number down. For example, 20 inches plus 2 inches=22 inches, divide by 6.28 =3.5 inches.
2. Mark a point as 1.
3. Measured down 3.5 inches. Mark it as 4.

4. Then rotate measuring tape an inch or two, measure down the same distance and mark. Continue doing this until an arc across that top corner is created. Mark this point as 5.
5. Measure down the length of your waist to knee measurement from 1, mark this point as 3.
6. Following the first arc, measure down that waist to knee measurement and mark it until a second arc is created, mark this point as 2.
7. Once two arcs completed skirt draft is final.
8. Take a circle and mark it at even intervals.
9. Connect one mark to another mark. The amount of marks skipped determines the size of the concentric circle created.
10. Take the next mark and connect it to the mark ahead of the one you connected the previous one to. Continue doing this.
11. The circle is completed.
12. Use inside circle as a starting point for creating another circle.
13. Fill in some of the kites created by the intersecting lines.

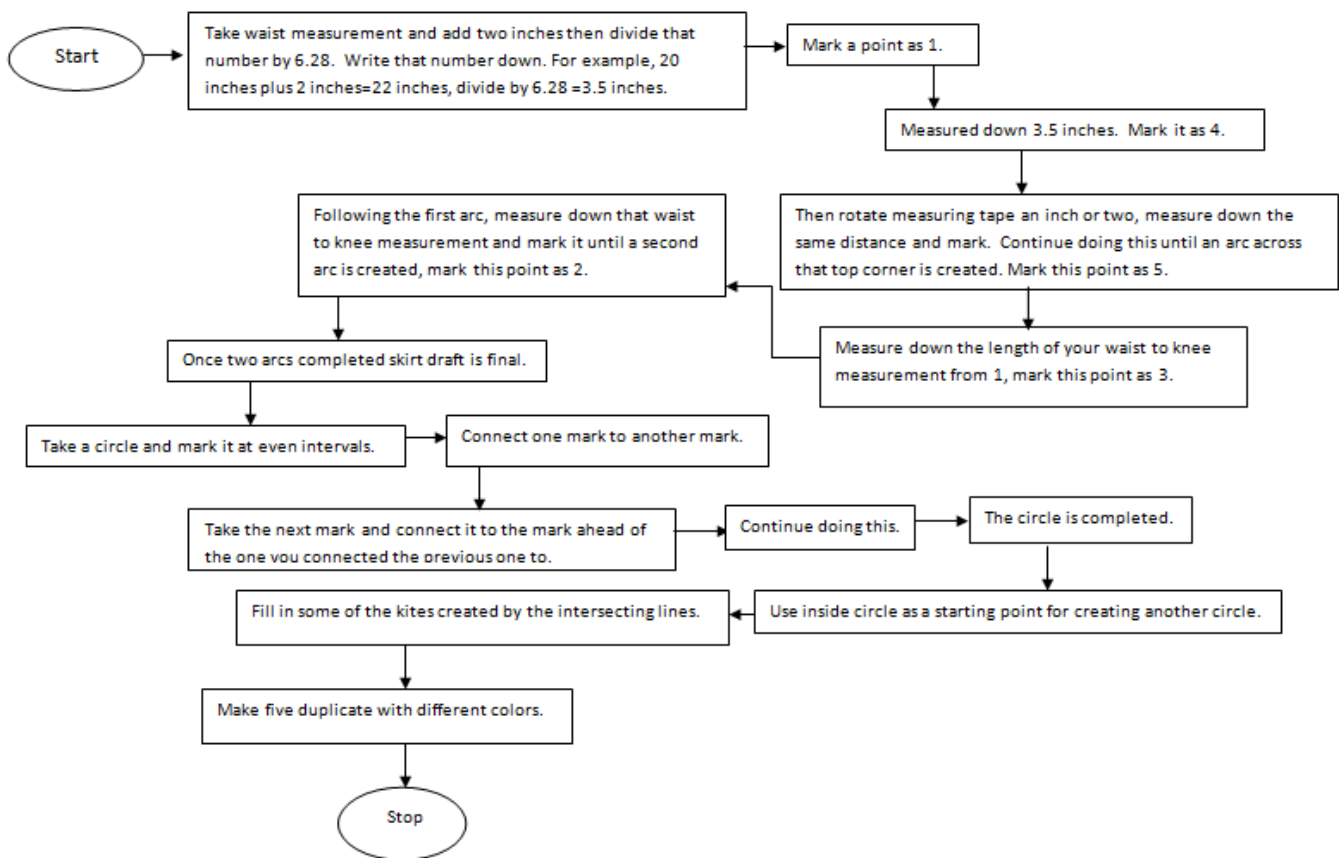


Fig. 1 Flowchart for integration of full circular skirt and concentrate circle

An attempt is made to create embroidery motif and to integrate it in the pattern using the concept of programming in C++. The program has been executed using C++ language and the results are presented. The motifs integration with pattern making created by the developed program has been recreated using commercially available Coral Draw and Reach Fashion Studio CAD tools used in fashion industry.

Motifs integration with pattern making created using all the three methods are given herein below.

To compare the motifs, one particular motif integration is created using the commercially available software(in finished garment) and the developed program (in draft pattern) and the results are shown in figures 2,3 and 4.

2.2 INTEGRATION WITH CONCENTRATED MOTIF

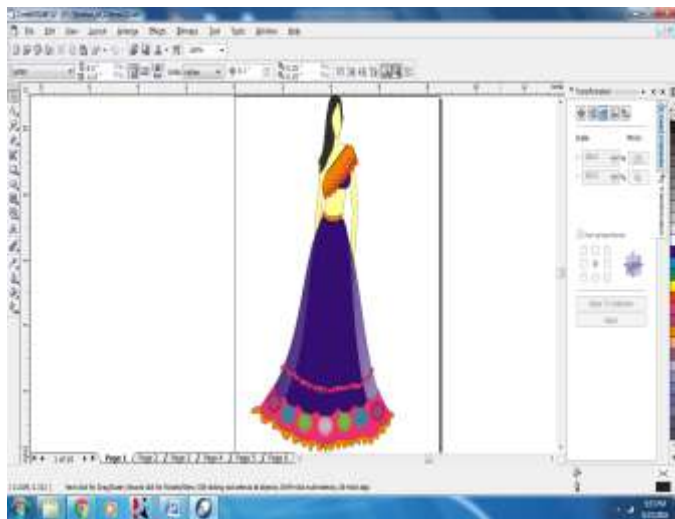


Fig. 2 Concentrated motif placed in garment using CorelDraw



Fig. 3 Concentrated motif placed in garment using Reach Fashion Design Software

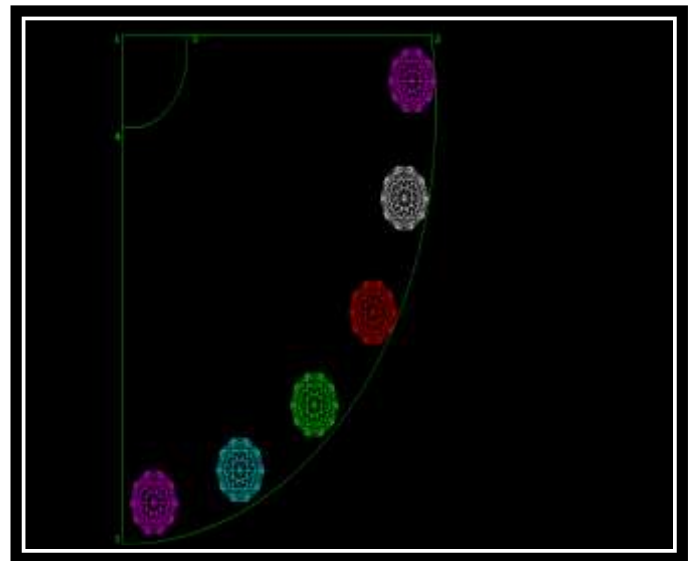


Fig.4 Concentrated motif placed in full circular skirt pattern using C++ programming

Concentrated motif integration as created by Corel Draw(fig. 2), Reach Fashion Studio(fig. 3) and by programming method(fig. 4) is presented. The output generated by the programming method is better in the sense that the details of the motifs are more clear than that of the other software's and also the colors are bright which gives a better visual output.

2. 3 INTEGRATION WITH TREE MOTIF

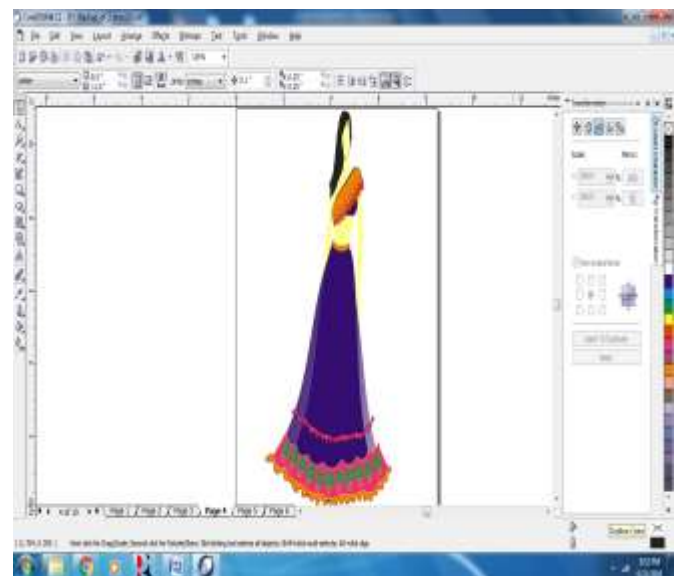


Fig. 5 Tree shaped motif placed in garment using Corel Draw



Fig.6 Tree shape motif placed in garment using Reach Fashion Design Software

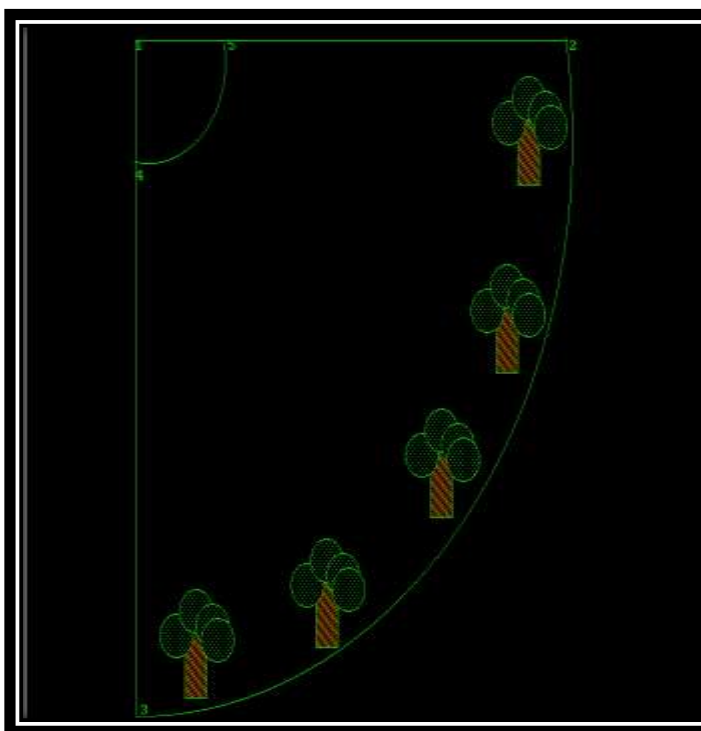


Fig. 7 Tree motif placed in full circular skirt pattern using C++ programming

The tree shaped motif is drawn by all the methods discussed above. From a close examination of fig.no.5 (Corel Draw), fig. no. 6 (Reach Fashion Studio) and fig. no. 7 (by programming) it is apparent that the motif drawn by first two methods are not as clear and sharp as by programming method.

CONCLUSIONS:

Here integration of motif with clothes are performed using Corel Draw, RFS and using C++ programming. Motifs were applied on garment to make a comparison between the three methods. In the method of C++ programming it is placed on pattern directly and number of motifs can be generated easily and quickly, while in second method, it has to be done manually one after the other. The motif generation its integration and placement on the garment through programming establishes its superiority over the methods of manual designing as done in other software's.

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AUTHOR PROFILE

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Shalini Singh received her MCA degree from Indira Gandhi National Open University. She has submitted her thesis for P. hd. in Computer Science on the topic of 'Innovative Design Strategy through Computer in Fashion Technology'.

RAJEEV SINGH

RAJEEV SINGH was born in Azamgarh district of U.P. in 1968. He received B.Sc. degree in 1989, B.Tech. in Electronics & Telecommunications in 1992, M.Tech. in Electronics Engineering in 1994 all from University of Allahabad. He obtained his D.Phil. degree in 2008 from University of Allahabad. He joined as Lecturer in the Department of Electronics and Communication, University of Allahabad, Allahabad (U.P)-India in 1996, became Sr. Lecturer in 2002, Reader in 2007 and Associate Professor in 2010. He has received German Academic Exchange Service Fellowship (DAAD) in the year 2003. He has worked for his D.Phil. research work during DAAD fellowship in the University of Potsdam, Germany from June 2003 to December 2004. He again visited University of Potsdam in the year 2008 under re-invitation program of DAAD. His area of research is charge storing polymers, polymer electronics, photo-stimulated charge profile measurements, thermal diffusivity of polymers, Microwave and RF device and circuit simulation and its applications.

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