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3D Grading and Pattern Unwrapping Technique for Loose-fitting Shirt Part 2: Functionality

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ABSTRACT

The functionality of a resizable template developed for the creation of virtual loose-fitting shirts, along with its support of automatic 3D grading and pattern flattening is described in this paper. The capacity of the system for performing as a 3D drawing platform and for supporting pattern flattening and 3D grading is tested and evaluated. Aspects of the design work are limited because the sleeves have been created separately from the body; this constraint may be addressed by building the template as a single shape. In other respects the template was found to be fully functional and ready for use by fashion designers and pattern technicians, allowing them to combine fashion illustration and pattern creation into a single step.

Keywords: Virtual shirt, pattern flattening, 3D grading

Introduction

Part 1 of this paper described the application of reverse engineering (RE) and geometric modelling techniques in the development of a resizable shirt template from a set of construction curves extracted from body scan data, and the scaling process to impart resizability to the template as well as the ability to generate various different silhouettes from the resizable template. This part describes the operation of the template.

As a part of the functionality testing, its performance as a 3D drawing board to produce virtual clothing on it and to support the creation of a wide range of adjustable silhouettes and fashion illustrations was judged. Flat pattern pieces were extracted and physical prototypes were created in order that the quality of the flattened pattern pieces might be evaluated. The template was converted into different sizes with the help of variable size databases so that the facility

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