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A method of shadow puppet figure modeling and animation

Key words: Shadow play, Shadow puppet figure, 3D human body, Data processing, 2D modeling

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Introduction

- Shadow play is an intangible cultural heritage in the world. Recently, the intangible cultural heritage has slowly disappeared, because people lose interest in it with the increasing popularity of new media. There is a need to promote this heritage.

- To attract more attention, some researchers have used multimedia and interactive tools. However, most of the shadow puppet figure models at present are still fictional and imaginary, made without according to the real dimensions or appearance of human bodies.

- With the development of 3D scanning and personalized demands, this study proposes a method of shadow puppet figure modeling and animation based on scanned data of real 3D human bodies to carry forward shadow play.

Method

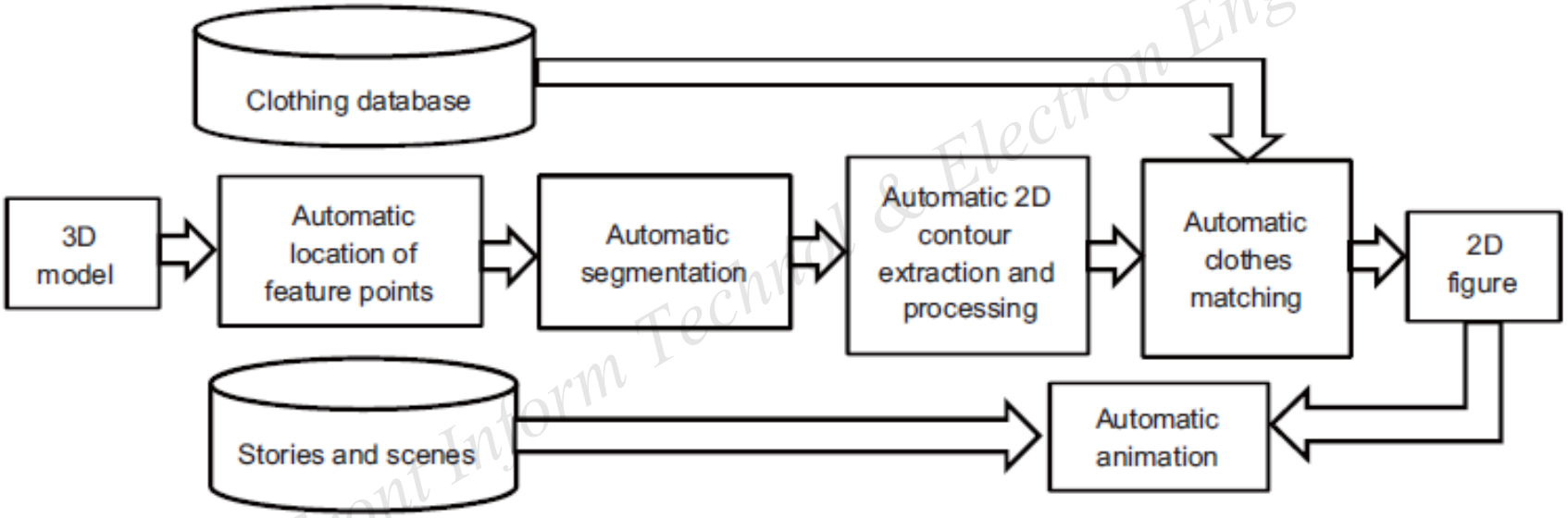

Fig. 1 The framework of our approach

Simulation results

Fig. 17 An animation of the female puppet figure

Fig. 18 Another animation of the female puppet figure

Simulation results (Con'd)

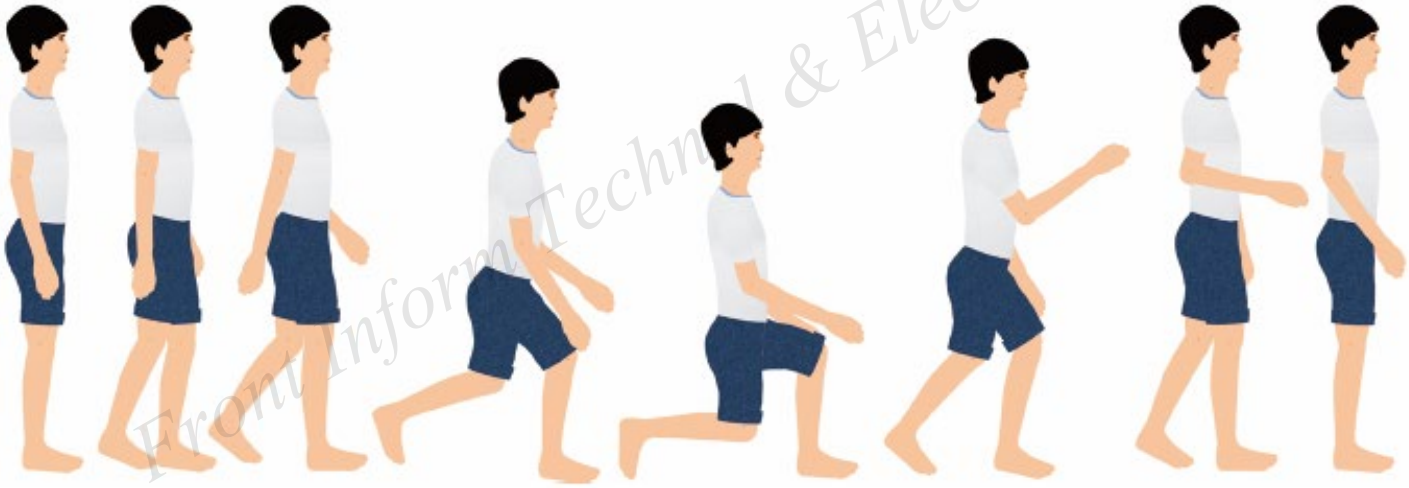

Fig. 19 The animation of the male puppet figure

Conclusions

- Real modeling and real-time animations of shadow puppet figures based on real dimensions of human bodies obtained from 3D scanned data are attracting more people. With this method, realistic figures of shadow puppets can be made and played not only in real shadow plays but also in digital animations. It is a natural and novel way of promoting the classic cultural treasure.