Lecture Notes in Computer Science **10790**

Commenced Publication in 1973
Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

More information about this series at http://www.springer.com/series/8277

Zhigeng Pan · Adrian David Cheok
Wolfgang Müller (Eds.)

Transactions on Edutainment XIV

Springer

ISSN 0302-9743 ISSN 1611-3349 (electronic)
Lecture Notes in Computer Science
ISSN 1867-7207 ISSN 1867-7754 (electronic)
Transactions on Edutainment
ISBN 978-3-662-56688-6 ISBN 978-3-662-56689-3 (eBook)
https://doi.org/10.1007/978-3-662-56689-3

Library of Congress Control Number: 2017933073

Printed on acid-free paper

This Springer imprint is published by the registered company Springer-Verlag GmbH, DE
part of Springer Nature
The registered company address is: Heidelberger Platz 3, 14197 Berlin, Germany

Editorial

In this issue, we selected 19 papers, which are divided into four sections. In the first section, there are five papers. In the first paper, Cao et al. describe the application of 2D/3D visualization in the process of clothing thermal computational design. The computational 2D visualization is employed to compare the key parameters between target cases and select appreciate case design. In the second paper, Wang et al. discuss the application of computer simulation and 3D modeling technology for e-fitting. They focus on analyzing and selecting key parts and characteristic parameters that influence the effect of dressing, and study how to create the contour of the human body's key parts by leveraging these key characteristic parameters. In the third paper, a novel dynamic hierarchical-layout algorithm is proposed to visualize hierarchical information on mobile devices. This layout algorithm tries to represent the hierarchical dataset with a more balanced aspect ratio for the rectangles, which is closely related to the aesthetics of treemaps. In the fourth paper, the special structure of an indoor environment was applied to accelerate home video cameras for 3D collection and identification of the indoor environment. There are two stages in this method: (a) the learning stage, for the 3D model of objects; (b) the identification stage, to determine the objects that were seen before. In the fifth paper, Liu et al. present a robust watermarking algorithm for 3D point cloud models based on feature vertices.

The second section comprises four papers. In the first paper, Li et al. propose an algorithm related to customers based on image gradient orientation (CS-IGO-LDA), where they represent the original samples by using image gradient orientation rather than the pixel intensity. In the second paper, Gao et al. train and test the aforementioned five-layer convolutional neural network on the pavement crack dataset. The experimental results show that this five-layer convolutional neural network performs better than the classic conventional machine learning method. In the third paper, an image zooming model was proposed based on image decomposition. The model decomposed the image into cartoons and textures; it analyzed the features of the isotropic model and anisotropic model, the cartoon part was zoomed by the isotropic model, and the texture part was zoomed by anisotropic model. In the fourth paper, Guo et al. propose an algorithm of salient object detection based on the fusion of foreground coarse extraction and background prior, which uses the prior information of the image boundary, as well as local and global information to extract the saliency map to construct the coarse saliency map.

In the third section, there are five papers. In the first paper, Pan et al. discuss a novel way to generate the customized couplet from the name-embedded couplet. The two-gram word graph technology is used to generate the first sentence that contains the given word. In the second paper, Lv et al. use computer simulation technology to build a virtual exhibition system for traditional costumes, so as to modify the public learning approach to traditional culture, to express and spread the culture meanings of Tang Dynasty costumes through text, images, and music, and to realize interaction with users

by means of interactive effects. In the third paper, Hu et al. use simulation techniques to reproduce animation game quake scenes, as well as secondary disasters caused by earthquakes, in which participants can be drilled for evacuation through virtual roles. Controlling the virtual character, participants can try out various escape plans. In the fourth paper, Huang et al. analyze and screen players in online games to quickly capture game bots, and let game operators perform the subsequent processing. First, they analyze game log data and arrange user behavior sequences to form a matrix with user information. Second, an extreme learning machine is used for classification and screening. In the fifth paper, Wang et al. present an algorithm that uses head posture, gaze, eye closure, and mouth opening, as well as facial expression features as attention observation attributes. Then machine learning classifiers are applied to code behavior features. Finally the time sequential statistics of behavior features evaluate the attention level and emotional pleasure degree.

The fourth section includes five papers. In the first paper, the authors expound on the connotation of the collaborative innovation research platform and its requested functions, and then illustrate the principles of building the collaborative innovation research platform. In the research, they take the Jilin Animation Institute as an example to study the structure. In the second paper, the author presents a bibliometric analysis of the papers published in the journal of *Technology Enhanced Foreign Language Education*, a core professional academic journal in China, during the period 2006–2015. The result aims to provide a clear view of the evolution of literature in the research field of technology-enhanced foreign language learning over the past decade. In the third paper, the authors establish a performance evaluation system for rural public sports services as the basis for setting up a scientific administrative control system for public sports services. In the fourth paper, the author elaborates on processes of the production and development of ink deckle-edged paper-cutting animation and summarizes its artistic style. In the fifth paper, the authors describe a CAD usability study for teaching and learning clothing thermal computational design for university students of fashion and textiles.

February 2018 Zhigeng Pan

Transactions on Edutainment

This journal subline serves as a forum for stimulating and disseminating innovative research ideas, theories, emerging technologies, empirical investigations, state-of-the-art methods, and tools in all different genres of edutainment, such as game-based learning and serious games, interactive storytelling, virtual learning environments, VR-based education, and related fields. It covers aspects from educational and game theories, human–computer interaction, computer graphics, artificial intelligence, and systems design.

Editorial Board

Contents