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# Transactions on Edutainment V

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# Preface

It is our pleasure to edit the fifth volume of the new journal *Transactions on Edutainment*. This journal part of the Springer series *Lecture Notes in Computer Science*, is devoted to research and development in the field of edutainment. Edutainment, also known as educational entertainment or entertainment-education, denotes all forms of entertainment designed to educate as well as to provide fun. This approach is motivated by the increasing demands on individuals for life-long learning and the need to integrate effective learning opportunities throughout life. As such, edutainment has attracted increasing interest in the last few years.

The first nine articles of this issue are regular papers. The paper “Innovative Integrated Architecture for Educational Games: Challenges and Merits” is an overview paper. *Rania Hodhod et al.* define a novel architecture that assists the dual-narrative generation technique to be employed effectively in an adaptive educational game environment. The architecture composes components that individually have shown effectiveness in educational game environments. These components are a graph-structured narrative, a dynamically generated narrative, evolving agents and a student model. An adaptive educational game has been developed to investigate the synergy of the architecture components. In “Beyond Standards: Unleashing Accessibility on a Learning Content Management System,” *Silvia Mirri et al.* explore various questions and perspectives about the implementation of two accessibility standards in an E-learning platform, achieving inclusion both of the standards and their goals to provide accessibility. In “Design and Implementation of an OpenGL-Based 3D First Person Shooting Game,” *Qiaomin Lin et al.* present the design and implementation of a 3D first person shooting game.

In “Direct Interaction Between Operator and 3D Virtual Environment with a Large-Scale Haptic,” *Jie Huang et al.* describe a direct interaction system which includes a large-scale 3D virtual environment and string-driven haptic. Key techniques of hand position measurement and string tension control are studied. In “Modeling and Optimizing Joint Inventory in Supply Chain Management”, Min Lu et al. study the new inventory management method called Joint Inventory Management. A model of Joint Inventory for manufacturing and marketing is presented. In “Vision-Based Robotic Graphic Programming System,” Jianfei Ma et al. study a vision-based robot programming system and describe the system architecture including the whole framework, the hardware and software components, as well as the visual feedback control loop structure.

In “Integrating Activity Theory for Context Analysis on Large Display,” *Fang You et al.* apply activity theory to understand the large display usage and show design ideas of large display: centralized mapping and gesture tracing. They take the speaker-audience usage as an example and present two prototypes based on activity-centered analysis. In “Line Drawings Abstraction from 3D

Models,” *Shujie Zhao et al.* propose a method to extract feature lines directly from 3D models. With this method, linear feature lines are extracted through finding intersections of two implicit functions that can work without lighting, and rendered with visibility in a comprehensive way. In “Interactive Creation of Chinese Calligraphy with the Application in Calligraphy Education”, *Xianjun Zhang et al.* propose a semiautomatic creation scheme of Chinese calligraphy and apply the scheme in calligraphy education.

The following 12 articles of this issue represent a selection of contributions from DMDCM 2010 held in Chongqing, China, in December 2010. Some topics of the conference are related to that of this new journal, including digital media and processing; digital content management; digital media transmissions; digital rights management; digital museum; geometry modeling; image-based rendering; real-time rendering; computer animation; 3D reconstruction; geographic information system; virtual reality/augmented reality; image/model/video watermarking; image segmentation; multimedia technology; image/model retrieval; cultural relics protection; ancient literature digitization; cultural relic restoration; modeling and rendering for heritage; interactive technology and equipment; media art and digital art; game design and development.

These 12 papers cover topics on human-computer interaction, virtual exhibit, face recognition, character animation etc. The paper titles are: “Outline Font Generating from Images of Ancient Chinese Calligraphy,” Tangible Interfaces to Digital Connections; Centralized Versus Decentralized, Research and Implementation of the Virtual Exhibit System of Places of Interest Based on Multi-Touch Interactive Technology; A Highly Automated Method for Facial Expression Synthesis; Sketch-Based 3D Character Deformation; Mean, Laplace–Beltrami Operator for Quadrilateral Meshes; Multi-User 3D-Based Framework for E-Commerce; Coordinate Model for Text Categorization; An Interface to Retrieve Personal Memories Through an Iconic Visual Language; VR-Based Basketball Movement Simulation; Mixed 2D–3D Information for Face Recognition; Research on Augmented Reality Display Method of Scientific Exhibits.

The papers in this issue present a large number of application examples in the area of E-learning, games, animation, multimedia, and virtual reality, which gives a broad view on the application of edutainment-related techniques. We would like to express our thanks to all those people who contributed to this issue. They are the authors, the reviewers, and the IPC of the DMDCM 2010 conference who recommended papers to this new journal. Special thanks go to Yi Li and Qiaoyun Chen from the journal’s Editorial Office in Nanjing Normal University for all their effort.

November 2010

Xubo Yang  
Ruwei Yun

# 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 the different genres of edutainment, such as game-based learning and serious games, interactive storytelling virtual learning environments, virtual-reality-based education, and related fields. It covers aspects of educational and game theories, human–computer interaction, computer graphics, artificial intelligence, and systems design.

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