



# Edutainment 2018 Programme

(28 ~ 30<sup>th</sup> June, 2018, Xi'an, China)

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## **Organizers**

Xi'an University of Technology, PRC

TC of Digital Entertainment and Simulation, CAS

## **Co-organizer**

Huaiyin Institute of Technology, PRC

## **Brief Introduction to the Edutainment 2018**

Edutainment 2018 is the 12th International Conference on E-Learning and Games, which provides an international forum for researchers and practitioners in various disciplines to share and exchange of experiences in the emerging research area combining Education and Entertainment.

This conference was established in 2006 by Prof. Zhigeng Pan when he was working in Zhejiang University, China. The first event is on April 15-17, 2006. The previous conferences was held in China(Hangzhou, Changchun, Nanjing, HK, Taibei, et al.), Canada, Germany, Australia, United Kingdom, et al..

Edutainment becomes an international major conference, which facilitates the international exchange of the-state-of-the-art in academic research and practice. The conference covers all aspects of pedagogical principles, designs and technological issues for Education, Research and Entertainment.

# **Committees**

## **Conference General co-chairs**

**Abdenmour El Rhalibi - Liverpool John Moores University, UK**

**Zhigeng Pan - Hangzhou Normal University, PRC**

**Xinhong Hei – Xi’an University of Technology, PRC**

## **Programme co-chairs**

**Dandan Ding - Hangzhou Normal University, PRC**

**Andres A. Navarro-Newball - Pontificia Universidad Javeriana Cali, Colombia**

**Yinghui Wang – Xi’an University of Technology, PRC**

## **Organization chair**

**Haiyan Jin – Xi’an University of Technology, PRC**

## **Organization co-chair**

**Jingyang Zhao- Huaiyin Institute of Technology, PRC**

## **Organization members**

**Rong Fei – Xi’an University of Technology, PRC**

**Zhaolin Xiao – Xi’an University of Technology, PRC**

**Yichuan Wang – Xi’an University of Technology, PRC**

**Huaijun Wang – Xi’an University of Technology, PRC**

## **Workshop co-chairs**

**Feng Tian - Bournemouth University, UK**

**Ruck Thawonmas - Ritsumeikan University, JP**

## **Publicity co-chairs**

**Xiaosong Yang - Bournemouth University, UK**

**Xun Luo - Tianjin University of Technology, PRC**

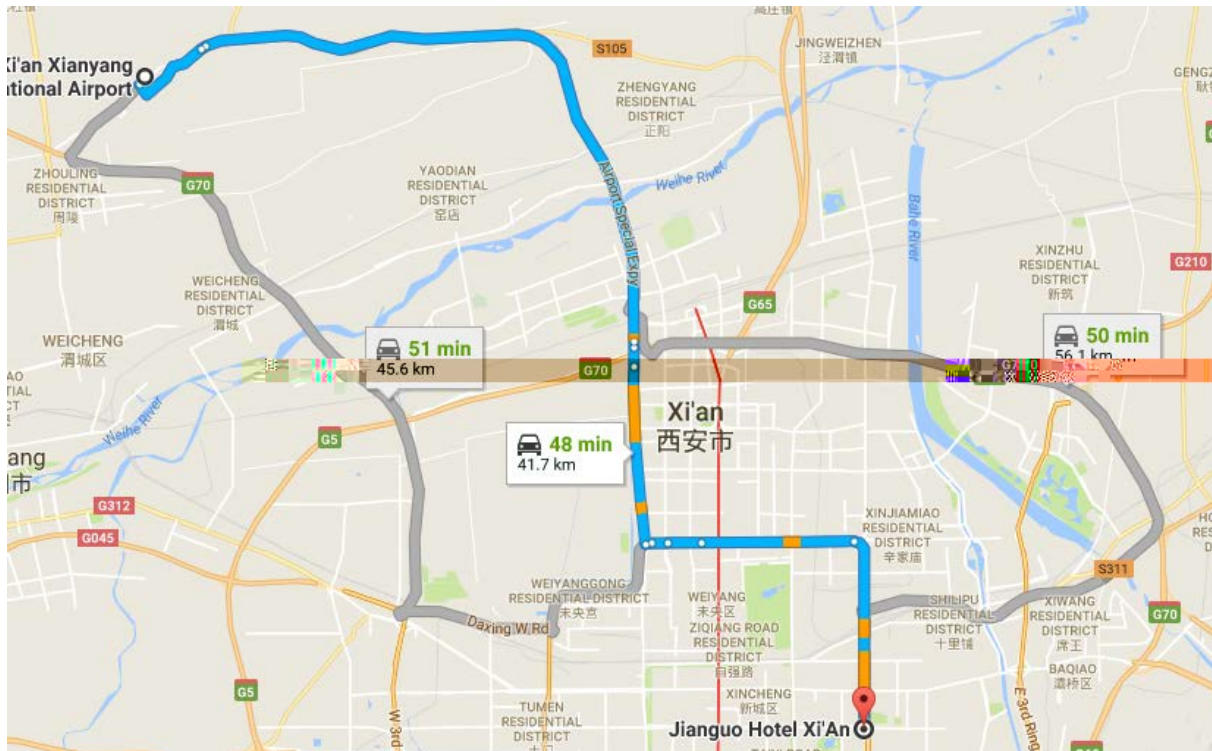
**Yoshihiro Okada - Kyushu University, JP**

# Schedule

Day 1: June 28

Registration

Venue: Jianguo Hotel Xi'an Hall



Time: 10:00---20:00

<b>Day 2 – June 29<sup>th</sup>, 2018</b>
<b>8:00 ~ 8:30 Registration</b> Venue: Jianguo Hotel, Xi'an, PRC
<b>8:30 ~ 9:00 Opening Ceremony</b> Venue: CHANG LE HALL B Chair: Prof. Xinhong Hei Welcome message: President, Xi'an University of Technology, PRC Conference co-chair of the conference Chair of the Steering Committee Program co-chair of the conference  Group photo
<b>9:00 ~ 10:00 Keynote Speech</b> Chair: Prof. Abdennour El Rhalibi Venue: CHANG LE HALL B Speaker: Dr. Tom Dawson - Rescon Technologies, UK Title: New approaches to data analytics in health and social care
<b>Tea Break 10:00 ~ 10:20</b>
<b>10:20 ~ 12:00 Keynote Speech</b> Chair: Prof. Zhigeng Pan Venue: CHANG LE HALL B Speaker: Prof. Hiroyuki Iida (Japan Advanced Institute of Science and Technology, Japan) Title: Using games as the testbed for AI research Speaker: Dr. Hoshang Kolivand Title: Future Research Directions in Virtual and Augmented Reality
<b>Lunch 12:00 ~ 13:30</b> Venue: GREENERY (The Ground Floor)
<b>Paper Session 1 (Virtual Reality and Augmented Reality in Edutainment):</b> <b>13:30 ~ 14:30</b> Venue: CHANG LE HALL B1 Chair: Dr. Andres A. Navarro-Newball
Pengtao Jia <sup>1</sup> , JunDeng <sup>2</sup> : <sup>1</sup> College of Computer Science and Technology, Xi'an University of Science and Technology, Xi'an, China <sup>2</sup> College of Safety Science and Engineering, Xi'an University of Science and Technology, Xi'an, China <i>Construction of 3D Interactive Virtual Simulation Experiment Platform for Coal Spontaneous Combustion</i>  Haiyan Jin, Wentao Lin, Zhaolin Xiao, Huan Liu, Bin Wang, Xiuxiu Li: Department of Computer Science and Engineering, Xi'an University of Technology, Xi'an, China <i>Barycentric shift model-based VR application for detection and classification on body balance disorder</i>

Shaohua Liu<sup>1</sup>, Xiyuan Song<sup>1</sup>, Hao Jiang<sup>2</sup>, Min Shi<sup>3</sup>, Tianlu Mao<sup>2</sup>

<sup>1</sup> Beijing University of Posts and Telecommunications, China

<sup>2</sup> Institute of Computing Technology, CAS, China

<sup>3</sup> North China Electric Power University, China

*Simulating Waiting Hall with Mass Passengers*

**Paper Session 2 (Gamification for Serious Game and Training): 13:30 ~ 14:30**

**Venue: CHANG LE HALL B2**

**Chair: Prof. Yinghui Wang**

Long Zuo<sup>1</sup>, Shuo Xiong<sup>2</sup>, Zhichao Wang<sup>1</sup>, Hiroyuki Iida<sup>1</sup>

<sup>1</sup> School of Information Science, Japan Advanced Institute of Science and Technology

School of Journalism and <sup>2</sup> Information Communication, Huazhong University of

Science and Technology

*An Analysis of Gamification Effect of Frequent-Flyer Program*

Muayyed J. Juma

Al Ma'moon University College

*Edutainment in Teaching English as Foreign Language*

Keigo Yabuki, Kaoru Sumi

Future University Hakodate, Kameda Nakanochi Hakodate-shi Hokkaido, Japan

*Serious Game for Learning the Conversation Method with Autism for Typically Developing*

**Paper Session 3 (Graphics, Imaging and Applications): 14:30 ~ 15:30**

**Venue: CHANG LE HALL B1**

**Chair: Dr. Feng Tian**

JianWen Song<sup>1</sup>, ZheFeng Ma<sup>1</sup>, Peng Song<sup>1</sup>, ZhiGeng Pan<sup>1,2</sup>

<sup>1</sup> Creating Design Manufacturing Collaborative Innovation Center, China Academy of Art, Hangzhou, China

<sup>2</sup> DMI Research Center, Hangzhou Normal University, Hangzhou, China

*Research on teaching experiment of color and Digital color*

Xiaojuan Ning, Jie Ma, Zhiyong Lv, Qingzheng Xu, and Yinghui Wang

Xi'an university of technology, Xi'an, Chin

*Structure Reconstruction of Indoor Scene from Terrestrial Laser Scanner*

Pengbo Zhou, Xiaotong Liu, Heng Wang, Xiaofeng Wang

School of Art and Communication, Beijing Normal University, Beijing, China

Information Science & Technology, Northwest University, Xi'an, China

*A Fast and Layered Real Rendering Method for Human Face Model—D-BRDF*

**Paper Session 4 (E-Learning and Game): 14:30 ~ 15:30**

**Venue: CHANG LE HALL B2**

**Chair: Prof. Ruck Thawonmas**

Xiaozhou Deng, Danli Wang and QiaoJin

Institute of Automation, Chinese Academy of Sciences, Beijing, China

*TLogic: A tangible programming tool to help children solve problems*

Pinata Winoto

Department of Computer Science, Wenzhou Kean University, China

*Two Lightweight and Customizable Picture-based Word*

*Learning Mobile Play Applications for Children with Autism*

Kun Ma, Yongzheng Lin, Kun Liu, Jin Zhou and Jiwen Dong.  
University of Jinan  
*School-Enterprise Cooperative Innovation and Entrepreneurship Courses and Case Library of Emerging Engineering Education.*

**Paper Session 5 (Game Rendering and Animation): 15:30 ~ 16:30**

**Venue: CHANG LE HALL B1**

**Chair: Dr. Jingyang Zhao**

Tingting Liu<sup>1</sup>, Zhen Liu<sup>2</sup>, Yanjie Chai<sup>2</sup>, Jin Wang<sup>1</sup>, Pingan Qian<sup>3</sup>, Xueyan Lin<sup>1</sup>

<sup>1</sup> College of Science and Technology, Ningbo University, Zhejiang, China

<sup>2</sup> Faculty of Information Science and Engineering, Zhejiang, China

<sup>3</sup> Ningbo No.9 Hospital, Zhejiang, China

*Modeling Emotional Contagion for Crowd in Emergencies*

Dan Song<sup>1</sup>, Yao Jin<sup>2</sup>, Tongtong Wang<sup>1</sup>, Chengyang Li<sup>1</sup>, Ruofeng Tong<sup>1</sup>, Jian Chang<sup>3</sup>

<sup>1</sup> State Key Lab of CAD&CG, Zhejiang University, Hangzhou, China

<sup>2</sup> College of Information Science and Technology, Zhejiang Sci-Tech University, Hangzhou, China

<sup>3</sup> NCCA, Bournemouth University, Bournemouth, UK

*A Semantic Parametric Model for 3D Human Body Reshaping*

Sarmad A. Abdulazeez, Abdenmour El Rhalibi

Department of Computer Science, Faculty of Engineering and Technology Liverpool

John Moores University, Liverpool, UK

*Dynamic Load Balancing for Massively Multiplayer Online Games Using OPNET*

**Paper Session 6 (E-Learning and Game): 15:30 ~ 16:30**

**Venue: CHANG LE HALL B2**

**Chair: Dr. Xun Luo**

Sun Lei, Li Chunlin

University Office, Northwestern Polytechnical University, Xi'an, China

*The Dilemma in University Internal Governance and Exploration for the Innovative Solution*

Chenguang Ma<sup>1</sup>, Wei Shi<sup>2</sup>, Yoshihiro Okada<sup>1,2</sup>

<sup>1</sup> Graduate School of ISEE, Kyushu University, Japan

<sup>2</sup> Innovation Center for Educational Resources (ICER), Kyushu University, Japan

*Interactive Web 3D Contents Development Framework Based on Linked Data for Japanese History Education*

Shogo Hirai, Kaoru Sumi

Future University Hakodate, Hokkaido, JPN

*Collecting Visual Effect Linked Data using GWAP*

**Tea Break: 16:30 ~ 16:50**

**Paper Session 7 (Game Rendering and Animation): 16:50 ~ 18:10**

**Venue: CHANG LE HALL B1**

**Chair: Prof. Yoshihiro Okada**

Lijuan Wang<sup>1,2</sup>, Yinghui Wang<sup>1,3</sup>, Ningna Wang<sup>4</sup>, Xiaojuan Ning<sup>1,3</sup>, Ke Lv<sup>5</sup>

<sup>1</sup> Xi'an University of Technology, Xi'an, China

<sup>2</sup> Xi'an Technology University, Xi'an, China

<sup>3</sup> Shaanxi key Laboratory of Network Computing and Security Technology, Xi'an, China

<sup>4</sup> Booking.com, Amsterdam, Netherlands

<sup>5</sup> Institute of automation, Chinese Academy of Sciences, Beijing, China

*A slice-guided method of indoor scene structure retrieving*

Fenggen Guo, Zizhao Wu

School of Media and Design, Hangzhou Dianzi University, China

*A Deep Reinforcement Learning Approach for Autonomous Car Racing*

Huaxian Pan, Lei Cai

Xing Zhi College of Xi'an University of Finance and Economics, Xi'an Shaanxi, China

Faculty of Computer Science and Engineering, Xi'an University of Technology, Xi'an,

Shaanxi, China

*An Improved Bi-goal Algorithm for Many-Objective Optimization*

Qihui Wu, Rui Liu, Dongsheng Zhou, Qiang

Zhang Key Laboratory of Advanced Design and Intelligent Computing (Dalian

University), Ministry of Education, Dalian, China

*3D human motion retrieval based on graph model*

**Paper Session 8 (Computer Vision in Edutainment): 16:50 ~ 18:10**

**Venue: CHANG LE HALL B2**

**Chair: Dr. Xiaosong Yang**

Jingjing Gao, Yinwei Zhan

School of Computer, Guangdong University of technology, Guangzhou, China

*Static 3D Hand Gesture Recognition Method*

Xiaofeng Wang<sup>1</sup>, Guohua Geng<sup>1</sup>, Na Wang<sup>1</sup>, Qiannan Song<sup>1</sup>, Ge He<sup>1</sup>, Zheng wang<sup>2</sup>

<sup>1</sup> Information Science & Technology, Northwest University, Xi'an, China

<sup>2</sup> School of Computing and Communications Infolab21, Lancaster University, Lancaster, UK

*A Combined Deep Learning and Semi-Supervised Classification Algorithm for LS Area*

Ye Li, Yinghui Wang, Jing Liu, Wen Hao

Institute of Computer Science & Engineering, Xi'an University of Technology, Xi'an, China

*A novel feature-based pose estimation method for 3D faces*

Bin Guo, Pengfei Yi, Dongsheng Zhou, Jing Dong, Xiaopeng Wei

Key Laboratory of Advanced Design and Intelligent Computing (Dalian University),

Ministry of Education, Dalian, China

*Humanoid Robot Control Based on Deep Learning*

**19:00 Conference Dinner**

**Venue: CHANG LE HALL B**

**Chair: Prof. Haiyan Jin**

**20:00 Best Conference Paper Award**

**Chair: Prof. Yinghui Wang**

**Declaring of Edutainment 2019**

**Dr. Andres A. Navarro-Newball**



**Day 3 – June 30<sup>th</sup>, 2018**

**8:30 ~ 9:20 Keynote Speech**

**Chair: Dr. Andres A. Navarro-Newball**

**Venue: CHANG LE HALL B**

**Speaker: Prof. RuigangYang (Baidu, USA)**

Title: Single-View Reconstruction and View Synthesis for AR/VR

**9:20 ~ 9:50 Invited talk**

**Chair: Prof. Ruck Thawonmas**

**Venue: CHANG LE HALL B**

**Speaker: Prof. Jim Chen (Editor in Chief of IEEE CiSE. George Mason University, USA)**

Title: Preparing high-quality papers for international journals

**9:50 ~10:10 Tea Break**

**10:10 ~ 10: 50 Invited talk**

**Chair: Prof. Xun Luo**

**Venue: CHANG LE HALL B**

**Speaker: Dr. Mingmin Zhang (Zhejiang University, China)**

Title:HCI in Elderly Healthcare

**10:50 ~ 12: 10 Invited talk**

**Chair: Dr. Dandan Ding(Hangzhou Normal University, China)**

**Venue: CHANG LE HALL B**

**Speaker: Dr. Minghui Sun**

*Enhancing Naturalness of Pen-and-Tablet Drawing through Context Sensing*

**Speaker: Prof. Ke Lv**

*Facial Landmark Detection Methods and Multi-target Reconstruction Technology*

**Lunch 12:10 ~ 13:30**

**Venue:GREENERY (The Ground Floor)**

**Paper Session 9 (Graphics, Imaging and Applications): 13:30 ~ 14:30**

**Venue: CHANG LE HALL B1**

**Chair: Dr. Tianlu Mao**

Jing Wang<sup>1</sup>, Hui Zhao<sup>1</sup>, Feng Liu<sup>1</sup>, Jie Zhang<sup>2</sup>

<sup>1</sup>School of Computer Science and Technology, Xidian University, Xi'an, Shaanxi, China

<sup>2</sup>Faculty of Computer Science and Engineering, Xi'an University of Technology, Shaanxi, China

*A Queue-based Bandwidth Allocation Method for Streaming Media Servers in M-Learning VoD Systems*

Yinghui Wang<sup>1,2</sup>, Yanni Zhao<sup>1,3</sup>, Ningna Wang<sup>4</sup>, Xiaojuan Ning<sup>1</sup>, Zhenghao Shi<sup>1</sup>, Minghua Zhao<sup>1</sup>, Ke Lv<sup>5</sup>

<sup>1</sup>Institute of Computer Science and Engineering, Xi'an University of technology, Xi'an, China

<sup>2</sup>Shaanxi Key Laboratory of Network Computing and Security Technology, Xi'an, China

<sup>3</sup>Department of Computer Science, Shannxi Vocational and Technical College, Xi'an, China

<sup>4</sup>Booking.com, Amsterdam, Netherlands

<sup>5</sup>Institute of automation, Chinese Academy of Sciences, Beijing, China

*A Hole Repairing Method based on Edge-Preserving Projection*

Yanni Zhao<sup>1,3</sup>, Yinghui Wang<sup>1,2</sup>, Ningna Wang<sup>4</sup>, Xiaojuan Ning<sup>1</sup>, Zhenghao Shi<sup>1</sup>, Minghua Zhao<sup>1</sup>, Ke Lv<sup>5</sup>

<sup>1</sup>Institute of Computer Science and Engineering, Xi'an University of technology, Xi'an, China

<sup>2</sup>Shaanxi Key Laboratory of Network Computing and Security Technology, Xi'an, China

<sup>3</sup>Department of Computer Science, Shannxi Vocational and Technical College, Xi'an, China

<sup>4</sup>Booking.com, Amsterdam, Netherlands

<sup>5</sup>Institute of automation, Chinese Academy of Sciences, Beijing, China

*A Hole Repairing Method based on Slicing*

Minghua Zhao, Tang Chen, Zhenghao Shi, Peng Li, Bing Li, Yinghui Wang  
School of Computer Science and Engineering, Xi'an University of Technology, Xi'an, China

*An improved total variation denoising model*

**Paper Session 10 (Computer Vision in Edutainment): 13:30 ~ 14:30**

**Venue: CHANG LE HALL B2**

**Chair: Dr. Rong Fei**

Zhengxuan Zhang, Jing Dong, Dongsheng Zhou, Xiaopeng Wei  
Key Laboratory of Advanced Design and Intelligent Computing (Dalian University),  
Ministry of Education, Dalian, China

*Improved Modular Convolution Neural Network for Human Pose Estimation*

Huan He<sup>1,4</sup>, Qinghua Zheng<sup>1,2</sup>, Rui Li<sup>4</sup>, Bo Dong<sup>3,4</sup>

<sup>1</sup>SPKLSTN Lab, Xi'an Jiaotong University.

<sup>2</sup>School of Electronic and Information Engineering, Xi'an Jiaotong University.

<sup>3</sup>National Engineering Lab of Big Data Analytics, Xi'an Jiaotong University.

<sup>4</sup>College of Distance Education, Xi'an Jiaotong University, Xi'an, China.

*Using Face Recognition to Detect "Ghost Writer" Cheating in Examination*

Zhenguo Gao, Shixiong Xia, Jiaqi Zhao  
School of Computer Science and Technology, China University of Mining and

Technology, Jiangsu, China

*Texture Image Segmentation Based on Stationary Directionlet Domain Probabilistic Graphical Model*

Yufeng Dong, Jian Lu, Qiang Zhang

Key Laboratory of Advanced Design and Intelligent Computing (Dalian University),  
Ministry of Education, Dalian, China

*Hand Pose Estimation using Convolutional Neural Networks and Support Vector Regression*

**Short Paper Session 1 (Virtual Reality and Augmented Reality in Edutainment): 14:30 ~ 15:30**

**Venue: CHANG LE HALL B1**

**Chair: Dr. Zhaolin Xiao**

Amira Nasr Eddine, Pan Junjun

State key laboratory for virtual reality and systems, Beihang University, Beijing, China  
*Geospatial Data Holographic Rendering Using Windows Mixed Reality*

Andrea Ortiz, Cristian Vitery, Carolina González, Hendrys Tobar

Department of Systems University of Cauca Popayán, Cauca, Colombia

*Developing an Augmented Reality Multiplayer Learning Game: Lessons Learned*

Mara Catalina Aguilera-Canon<sup>1</sup>, Tom Wainwright<sup>2</sup>, Xiaosong Yang<sup>1</sup>, Hammadi Nait-Charif<sup>1</sup>,

<sup>1</sup> Faculty of Media and Communications, Bournemouth University, Bournemouth, United Kingdom

<sup>2</sup> Faculty of Health and Social Sciences Bournemouth University, Bournemouth, United Kingdom

*Mixed reality-based simulator for training on imageless navigation skills in total hip replacement procedures*

Shaohua Liu<sup>1</sup>, Tong Zhao<sup>1</sup>, Hongwei Zhang<sup>2</sup>, Xiyuan Song<sup>1</sup>, Haibo Liu<sup>1</sup>, Tianlu Mao<sup>3</sup>

<sup>1</sup> Laboratory for Cyber-Physical System, School of Electronic Engineering, Beijing University of Posts and Telecommunications, Beijing, China

<sup>2</sup> Institute of Electronic and Information Engineering in Guangdong, University of Electronic Science and Technology of China, Dongguan, China

<sup>3</sup> Laboratory for Virtual Reality, Institute of Computing Technology, Chinese Academy of Sciences, Beijing, China

*Naturally Interact with Mobile Virtual Reality by CAT*

**Short Paper Session 2 (Gamification for Serious Game and Training): 14:30 ~ 15:30**

**Venue: CHANG LE HALL B2**

**Chair: Dr. Yichuan Wang**

Nachshon (sean) Goltz, Giulia Dondoli

Faculty of Law, University of Waikato, New Zealand

*Gaming the law adolescents and the harmful digital communication act – employing an educational approach*

Lvjie She<sup>1</sup>, Jinsong Fan<sup>2</sup>, Mingliang Cao<sup>3</sup>

<sup>1</sup> School of Mechanical & Electrical Engineering, Foshan University, Foshan, Guangdong, China

<sup>2</sup> School of Industrial Design & Ceramic Art, Foshan University, Foshan, Guangdong, China

<sup>3</sup> Guangdong Academy of Research on Virtual Reality Industry, Foshan University, Foshan, Guangdong, China

*User Experience Research and Practice of Gamification for Driving Training*

Jin Wang<sup>1</sup>, Pingan Qian<sup>2</sup>, Tingting Liu<sup>1</sup>, Zhen Liu<sup>3</sup>, Yanjie Chai<sup>3</sup>

<sup>1</sup>College of Science and Technology, Ningbo University, Zhuangshi, Zhenhai, Ningbo, Zhejiang, China

<sup>2</sup> Ningbo No. 9 Hospital, Jiangbei, Ningbo, Zhejiang, China

<sup>3</sup> Faculty of Information Science and Engineering, Ningbo University, Jiangbei, Ningbo, Zhejiang, China

*The Review of Affective Interaction Technology of Companion Robots for the elderly*

Luis Escorcia, Jimmy Moya, Daniel Sánchez.

Colombian School of Engineering Julio Garavito

*Awareness of Videogame Development in the Colombian Academic Field: How the Academy Sees Young Developers*

Diego Fernando Loaiza Buitrago<sup>1</sup>, Luis Alejandro Alvarez<sup>1</sup>, Carlos Marquez<sup>1</sup>, Diego Fernando Duque<sup>1</sup>, Yana Saint-Priest<sup>1</sup>, Patricia Segovia<sup>1</sup>, Andrés Navarro Newball<sup>2</sup>

<sup>1</sup> Universidad Santiago de Cali

<sup>2</sup> Pontificia Universidad Javeriana, Cali

*Gamification Strategies for an Introductory Algorithms and Programming Course*

**Short Paper Session 3 (Graphics, Imaging and Applications): 15:30 ~ 16:30**

**Venue: CHANG LE HALL B1**

**Chair: Dr. Huaijun Wang**

Wei Liang, Yinghui Wang, Wen Hao, Xiuxiu Li, Xiuhong Yang, Lu Liu

Xi'an University of Technology, School of Computer Science and Engineering, Xi'an, China.

*Spectral Dictionary Learning based Multispectral Image Compression*

Xiuxiu Li<sup>1</sup>, Haiyan Jin<sup>1</sup>, Zhaolin Xiao<sup>1</sup>, Liwen Shi<sup>2</sup>

<sup>1</sup> Xi'an University of Technology, Xi'an, China

<sup>2</sup> China Life Data Center, Shanghai, China

*Intrinsic Co-decomposition for Stereoscopic Images*

Shuang Zhang<sup>1</sup>, Lu Wang<sup>1</sup>, Xiangchuan Yu<sup>2</sup>, Bo Chen<sup>3</sup>

<sup>1</sup> Xi'an University of Technology, Xi'an, China

<sup>2</sup> ZTE Trunking Technology Corporation, Beijing,

<sup>3</sup> China Academy of Electronic and Information Technology, Beijing, China

*A Terrain Classification Method for POLSAR Images based on Modified Scattering Parameters*

Pinata Winoto, Tiffany Y. Tang

Department of Computer Science, Wenzhou Kean University, China

*An Adaptive Math Learning Application based on Eye-Gaze Tracking for Children with Autism Spectrum Disorder*

Lu Liu, Haiyan Jin, Junfei Shi, Wei Liang

School of Computer Science and Engineering, Xi'an University of Technology, Xi'an, China

*PoSAR Data Classification via Combined Similarity Based Immune Clonal Spectral Clustering*

Fu-Qun Zhao

School of Education Science, Xianyang Normal University, Xianyang, China

*Registration method for skull point cloud model*

**Short Paper Session 4 (E-Learning and Game): 15:30 ~ 16:30**

**Venue: CHANG LE HALL B2**

**Chair: Dr. Andrés Adolfo Navarro Newball**

Kun Ma, Yongzheng Lin, Kun Liu, Jin Zhou, Jiwen Dong  
Shandong Provincial Key Laboratory of Network Based Intelligent Computing,  
University of Jinan, Jinan, China  
*School-Enterprise Cooperative Innovation and Entrepreneurship Courses and Case  
Library of Emerging Engineering Education*

Shuo Xiong, Long Zuo, Zeliang Zhang, Shuo Zhang, Hiroyuki Iida  
School of Journalism and Information Communication, Huazhong University of Science  
and Technology, School of Information Science, Japan Advanced Institute of Science  
and Technology  
*E-learning Rhythm Design: case study using Fighting Games*

Jie Zhang<sup>1</sup>, Bingfang Qi<sup>2</sup>, Hui Zhao<sup>3</sup>, Yingpeng Zhang<sup>2</sup>, Erjun Zhang<sup>4</sup>, Toyohide  
Watanabe<sup>5</sup>  
<sup>1</sup> Faculty of Computer Science and Engineering, Xi'an University of Technology, China  
<sup>2</sup> SPKLSTN Lab, Department of Computer Science and Technology, Xi'an Jiaotong  
University, Shaanxi, China  
<sup>3</sup> School of Computer Science and Technology, Xidian University, Shaanxi, China  
<sup>4</sup> Institute of Laser Engineering, Beijing University of Technology, Beijing, China  
<sup>5</sup> Nagoya Industrial Science Research Institute, Nagoya, Japan  
*A Mobile Learning System with Multi-point Interaction*

Hui Yu<sup>1</sup>, Zhongqiu Zhang<sup>2</sup>  
<sup>1</sup> School Office of Northwestern Polytechnical University, Shaanxi, China  
<sup>2</sup> Mingde College Of Northwestern Polytechnical University, Shaanxi, China  
*Research on Mobile Learning System of Colleges and Universities*

SiQi Xie, MengLi Shi, Hong Yan  
College of Arts, Hainan University, China  
*A study of Negative Emotion Regulation of College Students by Social Games Design*

**Tea Break: 16:30 ~16:50**

**Short Paper Session 5 (E-Learning and Game): 16:50 ~ 17:50**

**Venue: CHANG LE HALL B1**

**Chair: Dr. Jingyang Zhao**

Jie Kong, Meng Ren, Ting Lu, Congying Wang  
Xi'an Shiyou University, Department of Computer Science, Xi'an, China  
*Analysis of College Students' Employment, Unemployment and Enrollment with Self-  
Organizing Maps*

Manuel Ibarra<sup>1</sup>, Ebert Gomez<sup>1</sup>, Pablo Ataucusi<sup>2</sup>, Vladimiro Ibañez<sup>3</sup>, Eliana Ibarra<sup>4</sup>,  
Waldo Ibarra<sup>5</sup>  
<sup>1</sup> Micaela Bastidas National University of Apurimac, Apurimac, Peru  
<sup>2</sup> COAR School, Challhuanca, Apurimac, Peru  
<sup>3</sup> National University of Altiplano, Puno, Peru  
<sup>4</sup> San Pablo Psychological Center, Cusco, Peru  
<sup>5</sup> San Antonio Abad National University of Cusco, Peru  
*Hands on work game: neuro-pedagogical method to improve math fraction teaching*

Tingting Liu<sup>1</sup>, Pingan Qian<sup>2</sup>, Zhen Liu<sup>3</sup>, Yanjie Chai<sup>3</sup>, Jin Wang<sup>1</sup>

<sup>1</sup>College of Science and Technology, Ningbo University, Zhuangshi, Zhenhai, Ningbo, Zhejiang, China

<sup>2</sup>Ningbo No.9 Hospital, Jiangbei, Ningbo, Zhejiang, China

<sup>3</sup> Faculty of Information Science and Engineering, Ningbo University, Jiangbei, Ningbo, Zhejiang, China

*The Research on Serious Games in Social Skills Training for Children with Autism*

Jie Zhang<sup>1</sup>, Yingpeng Zhang<sup>2</sup>, Hui Zhao<sup>3</sup>, Bingfang Qi<sup>2</sup>, Erjun Zhang<sup>3</sup>, Toyohide Watanabe<sup>4</sup>

<sup>1</sup> Faculty of Computer Science and Engineering, Xi'an University of Technology, China

<sup>2</sup> SPKLSTN Lab, Department of Computer Science and Technology, Xi'an Jiaotong University, Shaanxi, China

<sup>3</sup> School of Computer Science and Technology, Xidian University, Shaanxi, China

<sup>4</sup> Institute of Laser Engineering, Beijing University of Technology, Beijing, China

*A WebRTC E-Learning System Based on Kurento Media Server*

Jiawang Wang, Xiangyuan Lin, Jixuan Feng, Bin Wang, Haiyan Jin

Faculty of Computer Science and Engineering, Xi'an University of Technology, Xi'an, China

*A Plant Growing Game Based on Mobile Terminal and Embedded Technology*

**Short Paper Session 6 (Game Rendering and Animation & Computer Vision in Edutainment): 16:50 ~ 17:50**

**Venue: CHANG LE HALL B2**

**Chair: Dr. Feng Tian**

Dongsheng Yang, Yuling Fan, Shuqin Li, Hongming Zhang, Meili Wang  
College of Information Engineering, Northwest A & F University, Yangling, China  
*Position-based simulation of skeleton-driven character*

Jusheng Yua, Lu Lia, Yutao Qia

School of Computer Science and Technology, Xidian University, Xi'an, China

*Parallel MOEA/D for Real-time Multi-objective Optimization Problems*

Xiaohua Li<sup>1</sup>, Chenxu Zhao<sup>2</sup>, Jiulong Zhang<sup>1</sup>, Xiuxiu Li<sup>1</sup>

<sup>1</sup> School of Computer Science and Engineering, Xi'an University of Technology, Xi'an, China

<sup>2</sup> National University of Defense Technology, Changsha, China

*Bearing-only and Bearing-Doppler Target Tracking Based on EKF*

Zizhao Wu<sup>1</sup>, Feiwei Qin<sup>2</sup>, Shi Li<sup>1</sup>, and Yigang Wang<sup>1</sup>

<sup>1</sup> School of Media and Design, Hangzhou Dianzi University

<sup>2</sup> School of Computer Science and Technology, Hangzhou Dianzi University


*A motion-driven system for performing art*

Junfei Shi, Haiyan Jin, Yinghui Wang, Zhiyong Lv, Lu Liu

School of Computer science and Technology, Xi'an University of Technology, Xi'an, Shaanxi, China

*Latent Topic Model based Multi-feature Learning for PolSAR Terrain Classification*

## Keynotes Speakers and Abstracts of Speeches

 <p><b>Dr. Tom Dawson</b> <b>Rescon Technologies Ltd,</b> <b>UK</b></p>	<p><b>Biography</b> Dr. Tom Dawson D.Phil (Oxon), MB.ChB, B.Med.Sci, DSportsMed is a clinician technologist who comes from a clinical and academic background. He was the director of The Science and Medicine of Athletic Performance at the University of Oxford until 2009 and has held a variety of clinical posts, mainly in Sports Medicine. He has a wide cross sector background having been the military medicine theme leader for the Haldane-Spearman Consortium and is an independent technical advisor to the Defence Sciences Advisory Council (UK). In 2011 Dr. Dawson founded Rescon, and has since been working with his team on developing performance and biological system evaluation frameworks incorporating advanced analytics capabilities that utilise sensors, self-reporting and observational evaluation. These have been developed in concert with assessment and development of state of the art wearables, funded by the US military (DARPA) and the European Space Agency. Tom is the lead author on multiple patents with 11 having been granted to date.</p>
<p><b>Title:</b></p> <p><b>New Approaches to Data Analytics in Health and Social Care</b></p> <p><b>Synopsis:</b></p> <p>This talk will outline a self-healing network model approach to health and social care analytics. Top level inputs will be described along with looped actions leading to a self-improving model based on iterative feedback. The practicalities of data collection and fusion will be discussed along with real world examples to illustrate utility. Opportunities for new research and development of standards frameworks will also be outlined.</p>	



**Dr. Hoshang Kolivand**  
**Liverpool John Moores**  
**University, Liverpool, UK**

### **Biography**

Hoshang Kolivand is an active researcher in Computer Graphics. He received his MS degree in applied mathematics and computer from Amirkabir University of Technology, Iran, in 1999, and his PhD from Media and Games Innovation Centre of Excellence (MaGIC-X) in Universiti Teknologi Malaysia (UTM) in 2013 in the area of Realism of Mixed Reality. He has completed Post-Doctorate research in Interactive Augmented Reality in UTM. Previously he worked as a lecturer in Shahid Beheshti University, Iran and then as a Senior Lecturer in UTM. Currently he is a Senior academic and researcher at Liverpool John Moores University. He has published numerous articles in international journals, conference proceedings and technical papers, and book chapters in computer graphics and virtual reality. He is an active member of many conferences and international journals, and the General Chair of the International Conference on Digital Media 2018, organised in UK. He has also published many books in object-oriented programming and mathematics. His research interests include Computer Graphics, Virtual Reality and Augmented Reality.

### **Title:**

### **Future Research Directions in Virtual and Augmented Reality**

### **Synopsis:**

This talk will introduce the recent development in VR and AR illustrated by a number of recent projects and applications from Cultural Heritage to Medical Applications, I have been involved in, in the last few years. There is no doubt that Augmented Reality (AR) and Virtual Reality (VR) have the potential to become a fascinating widespread technology not only in computer graphics but also in many other subjects. In about two decades, AR or in general, Mixed Reality (MR) has turned into one of the most attractive topics in computer graphics with many researchers attempting to improve realism and interaction with the virtual environment. Realism and robust AR system is still an open issue. I will introduce in particular the techniques I have developed for the realism, robustness and interaction of AR systems and present possible future directions toward these enhancement. Moreover, interaction between real and virtual objects.





**Prof. Hiroyuki Iida**  
**Japan Advanced Institute**  
**of Science and**  
**Technology, Japan**

### **Biography**

Dr. Hiroyuki Iida was born in 1962, who has been an enthusiasm researcher in the domains such as computer games and entertainment computing, while acting as important roles of international activities such as conference chair, program chair and journal editor. He has also organized Mind Sports Computer Olympiad as the secretary/treasurer of ICGA (International Computer Games Association) for each year since early 2000. He supervised many master and PhD students until now, while acting as PhD committee member (external assessment) for PhD candidates in western countries such as Maastricht University and Tilburg University in the Netherlands. He also served as an external assessment for international research funding in western countries such as Canada and the Netherlands

### **Title:**

**Using games as the testbed for AI**

### **Synopsis:**

A brief history of research in this direction is introduced together with my own approach including opponent-model search (speculative play), understanding master's thinking way, game refinement theory and force-in-mind.



**Prof. Mingmin Zhang**  
Zhejiang University, China

Dr. Zhang Mingmin is an associate professor of Computer and Engineering Department, Zhejiang University. She got the Bachelor degree from Computer Science Dept, Nanjing University in 1990, the Master degree and the PhD from Computer Science and Engineering Department, Zhejiang University in 1995 and 2008 respectively. Since 1993, she has been working on several research and industrial projects related to computer graphics, virtual reality, multimedia, and HCI. She has published more than 40 papers on international journals, national journals, and conferences in recent years. Moreover, she won the second class prize of National Science and Technology Progress Award in 2013 and the second class prize of Natural Science Award of Zhejiang Province in 2015. She also has visited several universities or research institute, performing cooperative projects with some experts and researchers.

**Title:**

**HCI in Elderly Healthcare**

**Synopsis:**

The elderly people prefer VR games more than younger one. They are more solitude, need VR games to pacify their emotions. However, the gradually degenerated vision impedes accepting books and lower resolution screen, the poor response ability impedes accepting keyboard and mouse. We apply natural HCI methods to help elders to play VR games and communicate with other persons local or remote.

Gestures play an important role in our daily life, and they can help people convey information and express their feelings. Dynamic gestures recognition is the main research field and gets much attention of scholars. Aimed at the present situation that dynamic hand gestures recognition rate is low and the effect is not ideal, we use Sobel operator to detect the edges in gesture image sequences, enhancing the edge features in dynamic gesture image.

Facial expression is another natural way of inner world revelation. It plays a vital role in our social interactions. With it, we can express our feelings, and infer other people's attitude and intention. We are capable of telling other people's facial expressions at a glance, but not for machines. Facial Expression Recognition (FER) system makes machines being able to understand human emotions and intentions, which is very helpful for Human- Computer Interaction (HCI). Inspired by the advances Convolutional Neural Networks (CNNs) have achieved in image recognition and classification, we propose a CNN-based approach to address this problem.



**Prof. Ruigang Yang**  
Baidu, USA

Dr. Ruigang Yang is a professor of Computer Science at the University of Kentucky. He is currently on leave from the University and joins Baidu as its currently Chief Scientist for 3D Vision at Baidu Research.

He obtained his PhD degree from University of North Carolina at Chapel Hill and his MS degree from Columbia University. His research interests span over computer graphics and computer vision, in particular in 3D reconstruction and 3D data analysis. He has published over 100 papers, which, according to Google Scholar, has received close to 10000 citations with an h-index of 48 (as of 2017). He has received a number of awards, including US NSF Career award in 2004 and the Dean's Research Award in 2013. He is currently an associate editor of IEEE TPAMI and a senior member of IEEE.

**Title:**

**Single-View Reconstruction and View Synthesis for AR/VR**

**Synopsis:**

In this talk, I will discuss our recent work on 3D reconstruction and view synthesis using a single camera (with or without depth). While very high-quality dynamic 3D contents could be obtained with a camera array, we believe that using a single view will dramatically improve the accessibility for 3D content creation, in particular for user-generated contents. In this talk I will present our work on body-tracking, body reconstruction, and face modeling, all using a single camera as input.



**Jim X. Chen**  
**Department of Computer**  
**Science, George Mason**  
**University, USA**

Dr. Jim X. Chen is Professor of Computer Science, and the director of the Computer Graphics Lab at George Mason University (GMU), Fairfax, Virginia. In 1995, he received his Ph.D. in Computer Science from the University of Central Florida and joined the Computer Science Department at GMU as Assistant Professor. Jim is editor-in-chief of AIP/IEEE Computing in Science & Engineering (CiSE). He served as associate editor-in-chief of International Journal of Virtual Reality between 2006 and 2008, general co-chair of Edutainment2008, general co-chair of IEEE VR2006, program co-chair of IEEE VR (2002, 2003, and 2004), and guest editor for IEEE Computational Science & Engineering, CiSE, and PRESENCE. He has been an active reviewer/appraiser for NSF and other funding agencies. He is a senior member of IEEE and a professional member of ACM. Jim's research interests include computer graphics, virtual reality, visualization, networking, and simulation.

**Title:**  
**Preparing high-quality papers for international journals**