

13:00–18:00 **Registration** (*Lobby of Building 2*)
大会注册 (二号楼大堂)

14:00–17:00 **CVRVT Meeting** (*Taihe Hall*)
中国虚拟现实与可视化产业技术创新战略联盟工作会议 (二号楼一层太和厅)

18:00–19:30 **CCF-TCVRV Meeting** (*Taihe Hall*)
中国计算机学会虚拟现实与可视化技术专委会工作会议 (二号楼一层太和厅)

19:30–21:30 **CSIG-TCVR Meeting** (*Taihe Hall*)
中国图象图形学学会虚拟现实专业委员会工作会议 (二号楼一层太和厅)

- 07:00–18:00** **Registration** (*Lobby of Building 2*)
大会注册 (二号楼大堂)
- 08:30–08:50** **Opening Ceremony** (*Hongrun Hall*)
大会开幕式 (二号楼一层弘润堂)
- 08:50–09:40** **Keynote 1** (*Hongrun Hall*)
特邀报告 I (二号楼一层弘润堂)

Talk: Intelligence: 未来 VR 的新 I 特征

Speaker: 赵沁平院士, 北京航空航天大学

Abstract: 随着 VR、AI 技术的快速进步和 VR 应用领域的日益拓展及其对 VR 系统功能智能化需求的不断提高, AI 技术开始融入 VR 系统, 逐步成为 VR 的重要特征, VR 的主要特征将由 3I 发展为 4I。VR 的智能化特征将主要出现在 VR 未来发展的几个方向, 如 VR 对象、VR 建模和 VR 交互等, 这会给我们带来一系列需要解决的科学技术问题, 这些问题的突破将导致 VR 的换代式发展。

Bio: 国务院学位委员会委员、国家自然科学基金信息学部专家咨询委员会委员、中国仿真学会理事长。多年来一直在计算机科学领域进行虚拟现实技术和系统研究, 先后主持完成了国家自然科学基金重大、重点



项目、国家 863、国防科技等 20 余项国家科技计划项目。在我国率先开展了机器类比推理研究, 主持设计实现了芯片级类比推理器, 构建了类比推理机系统。作为我国虚拟现实领域的开拓者之一, 持续进行虚拟现实技术研究、系统研制和应用推广。在虚拟现实高精度快速建模和实时逼真绘制方面提出一系列新方法、新算法; 主持建立了我国第一个基于广域专用计算机网络的分布式虚拟环境 DVENET; 主持研制了具有自主知识产权的实时三维图形平台 BH_GRAPH、分布交互仿真应用程序运行平台 BH_RTI; 组织开发了“***战术指挥模拟训练系统”、“虚实融合的飞机驾驶舱布局设计系统”、“建国 60 周年国庆阅兵方案三维推演和决策系统”等国内有影响的虚拟现实应用系统。在国际、国内学术刊物和国际学术会议发表学术论文 180 余篇, 获国家发明专利授权 60 余项, 出版专著 3 部。获国家科学技术进步一等奖 1 项、国家科学技术进步二等奖 2 项、国家技术发明奖 1 项, 省部级科技奖 9 项, 获何梁何利科技进步奖。

- 09:40–10:30** **Keynote 2** (*Hongrun Hall*)
特邀报告 II (二号楼一层弘润堂)

Talk: 虚拟现实与人机交互

Speaker: 戴国忠研究员, 中国科学院自动化研究所

Abstract: 待定。

Bio: 中国科学院软件研究所人机交互技术与智能信息处理实验室首席研究员，博士生导师。毕业于中国科学技术大学，1982-1985 年在马里兰大学计算机系做访问学者。担任 ACM SIGCHI 中国分会荣誉主席，中国计算机学会人机交互专委会主任。曾任科技部 863 CIMS 项目专家组成员、973 项目咨询专家、北京市科委 CIMS 工程首席专家。主持和参加了多项国家自然科学基金项目、国家高技术研究发展计划项目、国家重点基础研究发展规划项目。主要研究领域为软件工程、人机交互技术。在国内外有影响的会议和刊物上发表论文百余篇，专著 2 部。三次获得国家科技进步奖，多次获中科院和部委科技进步奖。并获得中国计算机图形学大会贡献奖、和谐计算和人机交互会议终身成就奖。



10:30–10:50 **Tea Break** (*Rest Area of Hongrun Hall*)

茶歇 (二号楼一层弘润堂休息区)

10:50–11:40 **Keynote 3** (*Hongrun Hall*)

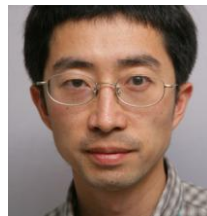
特邀报告 III (二号楼一层弘润堂)

Talk: From Internet Graphics to Intelligent Graphics

Speaker: 童欣研究员，微软亚洲研究院

Abstract: 互联网时代降低了内容创作和共享的门槛，而虚拟现实的流行使得三维内容的分享降低了门槛。在这个报告中，我将介绍我们如何利用机器学习技术辅助图形内容创作，从而进一步降低三维内容创作的门槛。

Bio: 童欣博士 1999 年毕业于清华大学获博士学位，之后加入微软亚洲研究院，目前为首席研究员，网络图形组研究主管。童欣博士的主要研究方向为计算机图形学，特别是材质建模，纹理合成，真实感绘制，人眼动画，数据驱动的几何处理等。他已在图形学会议和期刊上发表了 80 余篇论文，包括 40 多篇 SIGGRAPH/SIGGRAPH ASIA 论文。童欣博士目前担任 ACM TOG 和 IEEE TVCG 编委。



11:40–12:30 **Keynote 4** (*Hongrun Hall*)

特邀报告 IV (二号楼一层弘润堂)

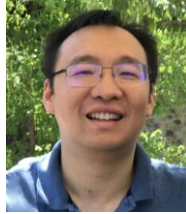
Talk: 3D Content Creation for Virtual Reality

Speaker: 杨睿刚教授，百度研究院/University of Kentucky

Abstract: One of the key prerequisites for any VR/AR application is the need for 3D models. Only with 3D models, either rendered directly or maintained internally, can VR/AR demonstrate their exciting new experiences to users. At the University of Kentucky's Gravity Lab, we have focused on the area of 3D model creation and 3D data analysis in the last 10 years. I will present our recent

advances in indoor/outdoor modeling and dynamic modeling of human, including body and face.

Bio: Ruigang Yang is currently the Chief Scientist for 3D Vision at Baidu Research. He is on leave from the University of Kentucky, where he is a full professor of Computer Science. 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 vision and



computer graphics, 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 2016). 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.

12:30-13:30

Lunch (*Huaxia Hall*)

自助午餐 (二号楼三层华夏堂)

13:30–15:30 Session 1-1: Computer Vision (VIP1 Hall)**分组报告 1-1: 计算机视觉** (一号楼五层 VIP1 厅)

Format: 7 min. for presentation + 3 min. for questions.
Top Paper: 20 min. for presentation and QA.

Chair: Xiaoguang Han, The University of Hong Kong

Bio: Xiaoguang Han is a research assistant professor at Chinese University of Hong Kong, Shenzhen and also a research scientist with Shenzhen research institute of big data. He got his Ph.D. degree from the University of Hong Kong. His research interests include Computer Graphics, Computer Vision and Computational Geometry.

- [114]Person Re-identification with Joint-loss (Junqi Liu, Na Jiang, Zhong Zhou, Wei Wu and Yue Xu).
- [078]Multi Target Tracking Based On Appearance Features (Hexi Li, Na Jiang, Chenxin Sun, Zhong Zhou and Wei Wu).
- [055]A Fast and Robust Large-scale Structure from Motion Using Auxiliary Information (Wenxiang Du, Yue Qi and Yao Lee).
- [086]Real-time Object Detection for 360-degree Panoramic Image using CNN (Yiming Zhang, Xiangyun Xiao and Xubo Yang).
- [047]Monocular Reconstruction of Non-rigid Shapes

Using Optical Flow Feedback (Jiaqing Liu, Xukun Shen and Yong Hu).

- [303]Invariant Information Learning for Image Recognition (Yufeng Chen, Bo Zhang and Lin Li).
- [027]End-to-End Cascade CNN for Simultaneously Face Detection and Alignment (Weilin Cong, Sanyuan Zhao, Jianbing Shen and Hui Tian).
- [151]A Novel Double-layer Framework for Joint Segmentation and Recognition of Multiple Actions (Xiangbin Shi, Yaguang Lu, Cuiwei Liu, Deyuan Zhang and Fang Liu).
- [005]Digital gesture recognition of DAG-SVMs based on depth image (Lin Baifeng).
- [036]A Novel Method for Data Glove-Based Dynamic Gesture Recognition (Xiaopei Guo, Zhiquan Feng, Changsheng Ai, Yingjun Li, Jun Wei, Xiaohui Yang and Kaiyun Sun).
- [Top Paper]Create a 3D Caricature in Minutes with Deep Learning (Xiaoguang Han).

13:30–15:30 Session 1-2: Geometry Processing (VIP2 Hall)**分组报告 1-2: 计算机视觉** (一号楼五层 VIP2 厅)

Format: 7 min. for presentation + 3 min. for questions.
Top Paper: 20 min. for presentation and QA.

Chair: Ligang Liu, Univ. of Sci. and Tech. of China

Bio: *Ligang Liu is a professor at the School of Mathematical Sciences, University of Science and Technology of China. His research interests include digital geometric processing, computer graphics, and image processing. He serves as the associated editors for journals of IEEE Transactions on Visualization and Computer Graphics, etc. He served as the conference co-chair of GMP 2017 and the program co-chairs of GMP 2018, CAD/Graphics 2017, CVM 2016, SGP 2015, and SPM 2014.*

1. [279]A Novel Dynamic Mesh Sequence Compression Framework for Progressive Streaming (*Bailin Yang, Zhaoyi Jiang, Yan Tian, Jiantao Shangguan, Chao Song, Yibo Guo and Minglinang Xu*).
2. [281]Conformal Parameterization by Minimizing Distortion Energy (*Junxiao Xue, Mingliang Xu and Chengming Liu*).
3. [037]Point Cloud Hole Filling based on Feature Lines Extraction (*Yinghui Wang, Tang Jing, Yanni Zhao, Wen Hao, Xiaojuan Ning and Ke Lv*).
4. [139]Scissor-Based 3D Deployable Contours (*Haoming Jiang, Xuejin Chen, Tingting Xuan, Lihan Huang and Ligang Liu*).
5. [134]Surface flattening based on energy fabric deformation model in garment design (*Yanjun Peng,*

Yuxiang Zhu, Mingmin Zhang, Yingran Ma and Yuanhong Wang).

6. [012]A Repair Method of Point Cloud with Big Hole (*Jing Tang, Yinghui Wang, Yanni Zhao, Wen Hao, Xiaojuan Ning and Ke Lv*).
7. [137]A hierarchical symmetry detection algorithm based on voxelization (*Xuanmeng Xie, Shan Luo, Qitong Zhang and Jieqing Feng*).
8. [133]Topology and Shape Preserved Lightweight of Shell Models utilizing Heat Diffusion (*Shengfa Wang, Longfei Zhang, Nannan Li, Baojun Li and Zhongxuan Luo*).
9. [209]Feature-enhanced Surfaces from Incomplete Point Cloud with Segmentation and Curve Skeleton Information (*Meili Wang, Yuling Fan, Shihui Guo, Minghong Liao, Jian Chang and He Dongjian*).
10. [262]Improved Mesh Segmentation with Perception-aware Cuts (*Tianhao Gao, Wencheng Wang and Binhai Zhu*).
11. [Top Paper]Mapping Large-Scale Virtual Scenes for VR Real Walking (*Ligang Liu*).

13:30–15:30 Session 2-1: VR Modeling (VIP3 Hall)

分组报告 2-1: VR 建模 (一号楼五层VIP3 厅)

Format: 7 min. for presentation + 3 min. for questions.

Chair: Xiaopeng Zhang, Institute of Automation, CSA

Bio: 中国科学院自动化研究所模式识别国家重点实验室 (NLPR) 及中法信息、自动化、应用数学联合实验室 (LIAMA) 研究员, 中国科学院大学兼职教授, 博士研究生导师, 中国系统仿真学会理事, 中国体视学会理事兼图象分析分会副主任委员。主要从事计算机图形学、计算机视觉、数字几何处理与模式识别等研究。先后主持国家自然科学基金项目、国家高技术发展计划项目、科技部国际合作项目、科技支撑计划等 10 多项国家项目。在国内外学术刊物和会议发表论文一百余篇, 出版编著 6 部 (IEEE, ACM, Springer), 完成专利 30 多项 (授权中国专利 20 多项, 公开的中国发明专利 7 项, 公开的美国发明专利 1 项); 获 2003 年度国家科技进步奖二等奖一项, 2008 年和 2012 年分别获中国专利优秀奖一项。

1. [282]基于 Bezier 曲面的麦穗生长建模研究 (薛均晓, 孙晨阳, 徐明亮).
2. [287]基于高精度点云数据的密封平面模型重建及产品质量评价 (张小兵, 刘海江).
3. [182]基于多特征融合的三维形状分割方法 (赵天

宇, 李海生, 吴晓群, 蔡强).

4. [216]基于可复用拉普拉斯的高效网格融合方法 (熊宇龙, 金耀, 张华熊, 林翔宇, 马文娟, 何利力).
5. [080]基于 SPH 方法的快速逼真流体表面张力仿真 (袁志勇, 徐标, 廖祥云).
6. [118]基于手机平台的大规模 BIM 场景网页漫游轻量化 (刘小军, 贾金原).
7. [202]基于最大内切球拟合的网格模型骨架提取 (缪永伟, 陈程, 孙瑜亮, 张旭东, 陈佳舟).
8. [149]基于几何重心和质心距离比不变性的多尺度点云配准算法 (孙水发, 夏坤, 李准, 董方敏, 杨继全).
9. [157]基于混沌的 3D 线框模型加密 (祝淑云, 金鑫, 赵耿, 李晓东, 孙红波, 徐治理, 殷岁, 田朝辉, 孙楠).
10. [162]脸部整形手术仿真中的网格变形处理 (李晋芳, 李日福, 刘家远, 李航).

13:30–15:30 Session 2-2: VR Rendering (VIP4 Hall)

分组报告 2-2: VR 渲染 (一号楼五层 VIP4 厅)

Format: 7 min. for presentation + 3 min. for questions.

Chair: Zhong Zhou, Beihang University

Bio: 北京航空航天大学教授, 博士生导师, 国际标准化组织 ISO/IEC/JTC1/SC24 委员会委员。主要从事虚拟现实相关技术的研究与开发。近年来主持国家自然科学基金面上项目 3 项、国家 863 计划课题 2 项、中国下一代互联网示范工程项目、国家科技支撑计划项目子课题、国家 973 计划子课题、广东省产学研合作项目等十余项。在国内外学术刊物和会议发表论文 50 多篇, 出版编著 1 部, 获国家发明专利授权十余项; 获国家科技进步二等奖 1 项、省部级科技进步一等奖 1 项等。

1. [205]同一场景中异质布料的动态绘制 (唐勇, 安阳阳, 张豆, 刘宇涵, 任小霞, 贾江凯).
2. [059]基于 PBR 的轻量级真实感 WebGL 实时渲染算法 (郑维欣, 张乾, 贾金原).
3. [155]基于三维梯度幅值的 CT 图像体绘制 (罗明).
4. [122]凹凸纹理的烙画艺术风格绘制 (钱文华, 曹进德, 喻超超, 徐丹).
5. [206]时空驱动的大规模真实感海洋场景实时渲染

(李颖, 唐勇, 张浩然, 刘丁, 周升腾, 王赛).

6. [041]基于物理的可交互性虚拟服装动画模拟 (石敏, 王俊铮, 毛天露, 刘亚宁).
7. [225]适用于虚拟试衣的实时服装绘制算法 (吕梦雅, 张豆, 唐勇, 安阳阳, 贾江凯, 刘宇涵, 任小霞).
8. [066]支持多视点的三维地震体远程可视化关键技术研究 (纪连恩, 赵妮, 梁适宜, 黄博).
9. [208]基于 CNN 和超分辨率重建的壁画风格化 (代文静, 张加万, 王萌).
10. [079]基于 SPH 的多相交界面气泡仿真 (孟颖, 朱娟, 司伟鑫, 廖祥云, 王琼, 王平安).

14:00–17:30 **CCVRT Workshop** (Shenshi Hall)

VR 产学研论坛 (二号楼五层盛世堂)

1. **报告 1: 智行, 践远--助力中国 VR 生态**
林浩, 戴尔全球副总裁, 戴尔大中华区终端客户解决方案副总裁
2. **报告 2: 打造虚拟现实刚需市场**
楚含进, AMD 中国区 VR 与计算平台总监
3. **报告 3: 虚拟仿真技术在实验教学中的应用与探索**

陈斌, 北京大学教授

4. 报告 4: 高校虚拟现实技术实验室建设方案

王龙华, 河南众诚信息科技股份有限公司技术总监、河南虚拟现实产业联盟技术顾问

5. 报告 5: 虚拟医疗手术创新实践

李帅, 北京航空航天大学博士生导师

6. 报告 6: VR/AR+教育应用的实践探索

蔡苏, 北京师范大学教育技术学院VR/AR+教育实验室主任

7. 报告 7: 增强虚拟现实技术促进未来教育

Jeff Kid, Zspace 全球副总裁

8. 报告 8: VR 创客教室解决方案

贺醒然, 河南众诚信息科技股份有限公司研发项目总监

15:30–16:30 Tea Break (*Level 5 of Building 1*)

茶歇 (一号楼五层休息区)

15:30–16:30 Poster Session 1 (*Level 5 of Building 1*)

论文海报分组 1 (一号楼五层)

1. [184]Adaptive Elliptic Weights Model in Radio

Tomographic Imaging (*Chunhua Zhu and Yue Chen*).

2. [228]The application of coupled three order cumulants' differential feature in fault diagnosis (*Wenbing Wu*).
3. [231]An effective feature extracting and matching scheme for Copy-move forgery detection (*Zixin Hu, Yanfen Gan, Jixiang Yang, Junliu Zhong and Lian Huang*).
4. [272]Hierarchical Hybrid DVE-P2P Networking Based on Interests Clustering (*Zhiyong Tu, Wei Jiang and Jinyuan Jia*).
5. [015]Small scale wind field display and wind motion simulation based on OSG (*Kui Hu, Jianwei Li and Yongzhen Luo*).
6. [052]Light field display: an adaptive weighted dual-layer LCD display for multiple views (*Qingchen Liu and Haiming Lu*).
7. [143]An improved illumination invariant SURF image feature descriptor (*Zexun Geng and Yuqing Qiao*).
8. [233]Multi-sensors Based 3D Gesture Recognition and Interaction in Virtual Block Game (*Rui Han, Zhiquan Feng, Tao Xu and Changsheng Ai*).
9. [083]Research of the Real-time Simulation of Viscoelastic Fluid and the Solid Melting Process based on SPH (*Mingjing Ai, Baohe Chen and Qunfang Yang*).

- 10.[100]Research on Flexible Mapping among Multiple Gestures and One Semantic in Intelligent Teaching Interface (*Yu Qiao, Zhiquan Feng, Changsheng Ai, Yingjun Li, Jun Wei, Xiaohui Yang, Tao Xu and Xiaoyan Zhou*).
- 11.[127]Text Segmentation of Health Examination Item Based on Character Statistics and Information Measurement (*An Hui, Yang Yage and Pan Zhigeng*).
- 12.[159]The SJTU UHD 360-Degree Immersive Video Sequence Dataset (*Xu Liu, Yongcheng Huang, Li Song, Rong Xie and Xiaokang Yang*).
- 13.[062]Avatars' Skeleton Connection and Movement Data Network Synchronization (*Qi Qi, Sanyuan Zhao, Shuai Wang, Linjing Lai and Zhengchao Lei*).
- 14.[105]Evaluation of Direct Physics-Inspired Interaction for Mixed Reality Based on Optical See-Through Head-Mounted Displays (*Benyang Cao*).
- 15.[172]CWordle: A Visual Analytics System for Extracting the Topics of Speech (*Xiang Tang and Xiaoju Dong*).
- 16.[223]Research and Development of a Mobile-based Virtual Try-on System, Low-cost and Personalized (*Hongqiang Zhu, Jing Tong, Luosheng Zhang and Xiao Zou*).
- 17.[251]The construction of wargaming system based on VR technology (*Hang Pei, Yong Kang, Xisheng Su and Jiangang Shao*).
- 18.[260]Virtual design and simulation of vehicle engineering based on VR (*Lan Xiaoping and Shi Xue*).
- 19.[297]Reasoning Algorithm of Outdoors Tumble Based on E" Set for the Elderly (*Jianwen Song, Bo Wang, Li Xu, Mei Chen and Zhi Pan*).
- 20.[017]Research on Virtual Reality Simulation Training System of Substation (*Xiaohui Liao, Jinliang Niu, Hao Wang and Xiaochen Zhu*).
- 21.[230]Extraction of Interest Points on 3D Meshes based on Bilateral Filtering (*Han Guo, Xiangyu Kong, Dongmei Niu and Xiuyang Zhao*).
- 22.[239]Research on Thangka Image Scene Switching based on VR (*Jianbang Jia, Chuanqian Tang, Shouliang Tang, Huan Wu, Xiaojing Liu and Zhiqiang Liu*).
- 23.[093]Multiple RNN Method to Prediction Human Action with Sensor Data (*Xiangru Chen, Yue Yu and Fengxia Li*).
- 24.[181]Feature extraction based on weighted modular matrix PCA (*Minghua Zhao, Feifei Zhang, Zhenghao Shi and Bing Li*).
- 25.[176]View-dependent Omnidirectional Video Encapsulation using Multiple Tracks (*Ying Luo, Li Song, Rong Xie and Chuanfei Luo*).

- 26.[241]沉浸式虚拟维修位置追踪与动作虚实耦合研究 (张飞, 徐丙立, 张承钊, 崔颠博, 李霖, 饶毅).
- 27.[020]数据手套和步进电机组合方式的灵巧手主从控制方法 (潘康俊).
- 28.[023]基于车道线的车辆种类划分方法 (陈涛, 高尚兵, 潘志庚, 覃方哲, 何桂炼).
- 29.[057]层次化虚拟人运动控制方法研究 (宋强, 李淳芄, 张建达, 高亚楠).
- 30.[129]航海模拟器中的岸线实时碰撞检测 (景乾峰, 神和龙, 尹勇, 刘秀文).
- 31.[168]基于 RGB-D 的树状结构物体三维重建 (陈国军, 张清伟).
- 32.[290]基于 ORB 的单目 SLAM/SINS 组合移动增强现实的研究 (孙彤, 秦文虎, 孙立博).
- 33.[024]应急撤离场景中群体信息交流行为建模 (何相君, 黄英凡, 毛天露, 蒋浩).
- 34.[048]科学可视化课程的沉浸式 VR 教学系统“未奥” (贾鑫, 崔晨, 傅泽卿, 邓依伊, 骆岩林).
- 35.[300]一种使用深度图像和平面优化的三维实时重构算法 (周响南, 张新宇).

- 36.[072]基于视频模型的虚拟现实视频融合系统 (周颀, 孟明, 吴威, 周忠).
- 37.[178]一种改进的双凸模糊变分植物图像分割模型 (刘国奇, 邓铭, 李晨静).
- 38.[222]基于深度图像的人体动作识别 (唐超, 张苗辉, 李伟, 曹峰, 王晓峰, 童晓红).
- 39.[229]基于 SIFT 和改进 RANSAC 算法的影像匹配 (乔玉庆, 耿则勋).
- 40.[235]虚拟现实技术在老年跌倒预防中的应用研究 (陈美玲, 潘志庚, 宋建文, 安辉, 汤庆丰).

15:30–16:30 Exhibitors (Plaza of Building 1&2)
成果展览 (一、二号楼外广场)

- [101]北京巧克互动国际教育科技有限公司
- [102]超威半导体产品(中国)有限公司
- [103]北京利君成数字科技有限公司
- [104]北京纳虚光影科技有限公司
- [105]DELL 戴尔(中国)有限公司
- [106]北京七维视觉科技有限公司
- [107]北京游牛科技有限公司

8. [108]虚拟现实技术与系统国家重点实验室 (北京航空航天大学)
9. [109]教育部虚拟现实应用工程研究中心 (北京师范大学)
10. [110]和思易科技 (武汉) 有限责任公司
11. [111]北京小鸟看看科技有限公司
12. [201]北京市虚拟仿真与可视化工程技术研究中心 (北京大学)
13. [202] 北京市混合现实与新型显示工程技术研究中心/青岛精工虚拟现实研究院 (北京理工大学)
14. [203]撒哈拉 (青岛) 教育科技有限公司
15. [204]河南众诚信息科技股份有限公司
16. [205]河南幻境数字科技有限公司
17. [206]河南省灵境科技有限公司
18. [207]河南微阿科技有限公司
19. [208]河南省慕华教育科技有限公司
20. [209]河南研成中迅科技有限公司
21. [210]威爱教育
22. [211]北京印刷学院

23. [212]金东数字创意股份有限公司

16:30–18:30 Session 1-3: Modeling Techniques (VIP1 Hall)
分组报告 1-3: 建模技术 (一号楼五层VIP1 厅)

Format: 7 min. for presentation + 3 min. for questions.
 Top Paper: 20 min. for presentation and QA.

Chair: Ruizhen Hu, Shenzhen University

Bio: Ruizhen Hu is currently an Assistant Professor as Shenzhen University and Deputy Director of the Visual Computing Research Center (VCC). She is the recipient of 2015 Shenzhen Peacock Talent Award. She received her Ph.D. degree in Applied Math from Department of Mathematics at Zhejiang University. From Oct. 2012 to Oct. 2014, she visited the GrUVi Lab at Simon Fraser University. Her current research interests are in the areas of computer graphics, especially in shape analysis, geometry processing and fabrication.

1. [138]Rapid Construction Algorithm of 3D Urban Road Network from Raster Maps (Xincan Zhao, Penglei Zhan and Yaodan Liu).
2. [140]Stress-Oriented Structural Optimization for Frame Structures (Shuangming Chai, Baiyu Chen, Mengyu Ji, Zhouwang Yang, Manfred Lau, Xiao-Ming Fu and Ligang Liu).
3. [301]Disassemble-and-Pack for Mechanism

(Mingyuan Li, Xiaoheng Jiang, Ningbo Gu, Weiwei Xu, Junxiao Xue, Bing Zhou and Mingliang Xu).

4. [240]Plants Modeling Based on Limited Points *(Lanling Zeng, Lingling Zhang, Yang Yang, Wei Zhang and Yongzhao Zhan).*
5. [074]A Realistic Modeling and Real Time Rendering of Fruit Decay by Interactive Design *(Wu Sheng, Miao Teng and Xiao Boxiang).*
6. [076]Multi-events Driven Emotion Dynamic Generation Using Hawkes Process *(Nan Xiang, Mingmin Zhang and Jianwu Long).*
7. [255]A Novel Reconstruction Method of 3D Heart Geometry Atlas Based on Visible Human *(Gongning Luo, Kuanquan Wang, Pengbo Bo, Yong Xia and Henggui Zhang).*
8. [160]Research on 3D Modeling Technology of Craniofacial Implants Based on Topology Optimization Method *(Min Zhang, Ning Dai, Ling-Yin Meng, Xiao-Ling Yu, Yi-Hua Zhang, Bing-Yao Liu and Sen-Lin Zhang).*
9. [188]A Simple Non-parametric Human Action Recognition System Based on Two-layer AP *(Xing Li and Enqing Chen).*
10. [195]Primitive Shape Extraction for Objects in Point Clouds *(Fan Li and Xiaojuan Ning).*
11. **[Top Paper]** Learning to Predict Part Mobility from a Single Static Snapshot *(Ruizhen Hu).*

16:30–18:30 Session 1-4: Learning-based VR *(VIP2 Hall)*
分组报告 1-4: 基于学习的 VR *(一号楼五层VIP2厅)*

Format: *7 min. for presentation + 3 min. for questions. Top Paper: 20 min. for presentation and QA.*

Chair: *Junfeng Yao, Xiamen University*

Bio: *Junfeng Yao is a professor and chair of department of digital media engineering in software school of Xiamen University. He received his Ph.D. in thermal engineering, specialized in Computer Simulation, from the Central South University in China in 2001. He was a visiting scholar in Southern Polytechnic State University, Atlanta, and in Electrical Engineering, University of Washington. He has published over 60 papers and 9 books.*

1. [237]A novel intelligent thyroid nodule diagnosis system over ultrasound images based on deep learning *(Yi Zhike, Hao Aimin, Song Wenfeng, Li Hongyi and Li Bowen).*
2. [305]Brain Network Dynamic Feature Clustering Method Based on Dimension Reduction of Significant Contribution Degree *(Zhao-Kun Dai and Hui Liu).*
3. [243]Research and Application of Genetic Algorithm Based on variable crossover probability *(Bingxu Zhao and Zhenkai Xiong).*

4. [058]An Intelligent Discovery and Error Correction Algorithm for Misunderstanding Gesture Based on Probabilistic Statistics Model (*Kaiyun Sun, Zhiquan Feng, Changsheng Ai, Yingjun Li, Jun Wei, Xiaohui Yang and Xiaopei Guo*).
5. [177]Performance Comparisons between Force-directed Algorithms on Structured Data Analysis (*Jie Hua, Mao Lin Huang and Guohua Wang*).
6. [009]Intelligent Identification of Ocean Parameters in the Mischief Reef Area Based on RBF Neural Networks (*Wei Wu*).
7. [018]Research on Interaction of Exposure Operation in Virtual Surgery (*Pan Zhou and Quanyu Wang*).
8. [121]A Reliable, Precise and Efficient 3D Printer Process Controlling Algorithm (*Zhiyong Tu, Jinyuan Jia and Fengting Yan*).
9. [203]A Chinese Sign Language Recognition System Using Leap Motion (*Yaofeng Xue, Shang Gao and Huali Sun*).
- 10.[288]Low Complexity Hybrid View Synthesis Optimization for 3D-HEVC (*Songchao Tan, Siwei Ma, Shiqi Wang, Sanshe Wang and Wen Gao*).
- 11.[**Top Paper**]Autonomous Reconstruction of Unknown Indoor Scenes Guided by Time-varying Tensor Fields (*Lintao Zheng*).

16:30–18:30 Session 2-3: VR & AI (VIP3 Hall)**分组报告 2-3: VR 与 AI** (一号楼五层VIP3 厅)

Format: 7 min. for presentation + 3 min. for questions.

Chair: Zhiyong Yuan, Wuhan University

Bio: 武汉大学计算机学院教授, 博士生导师, 中国计算机学会虚拟现实与可视化技术专业委员会委员。主要从事医学图像分析与医学仿真研究。近年来主持国家自然科学基金面上项目、国家973项目、中美合作课题、新兴交叉研究项目、国家973医学中医专项子课题等10余项国家项目。在国内外公开刊物发表论文40余篇, 出版编著4部。

1. [302]基于深度学习的飞机油箱剩余油量测量方法 (郭毅博, 牛猛, 薛均晓, 练夏林, 王华, 郑永康, 周兵, 徐明亮).
2. [278]一种基于深度卷积神经网络的小目标快速检测方法 (黄刚, 田彦, 王勋).
3. [125]一种结合深度学习和随机森林的地平线检测方法 (叶继华, 时淑霞, 左家莉).
4. [274]基于 VR 火灾逃生游戏的应急行为评估方法与系统 (何高奇, 郁明强, 蒋正清, 卢兴见).

5. [028]自助三维导诊系统的研究与实现 (黄云辉, 刘笑寒, 吕奕清, 黄孕宁, 姚俊峰).
6. [173]基于自适应聚类中心的脑血管分割方法 (王喆, 赵世凤, 王学松, 周明全).
7. [087]HSI-CNN: 小样本高光谱遥感图像深度学习方法 (石祥滨, 钟健, 刘翠微, 刘芳, 张德园).
8. [293]基于 Frenet 标架下三维元胞自动机的舰载机集群运动建模 (王华, 韩璐, 楚世理, 甘勇, 吕培, 郭毅博, 徐明亮).
9. [197]基于跨模式特征深度学习的 RGB-D 视频目标跟踪 (姜明新, 潘志庚, 陈新).

16:30–18:30 Session 2-4: VR & Recognition (VIP4 Hall)
分组报告 2-4: VR 与识别 (一号楼五层VIP4 厅)

Format: 7 min. for presentation + 3 min. for questions.

Chair: Qing Wang, Northwestern Polytechnical Univ.

Bio: 西北工业大学教授, 博士生导师, CCF 虚拟现实与可视化专委会委员, CCF 计算机视觉专业组委员, 陕西省语音图像信息处理重点实验室副主任。多年来一直从事图像处理、计算机视觉、计算摄像学等方向研究工作, 主持国家自然科学基金重点项目 1 项、面上

项目 3 项、“863”课题 1 项,“863”子课题 2 项, 省部委基金 7 项, 工业界合作课题 8 项。获国家级教学成果二等奖 1 项, 省部级科技进步二等奖 1 项、三等奖 2 项。授权发明专利 4 项, 软件著作权 1 项, 发表学术论文 100 余篇, 研究成果已应用于相关领域。

1. [101]基于片段关键帧的视频行为识别方法 (李鸣晓, 庚琦川, 莫红, 吴威, 周忠).
2. [111]监控场景中基于图像描述的人物检索 (李亚栋, 刘永超, 庚琦川, 周忠, 吴威).
3. [115]LOBSTER 与 MOG 结合的 RGB-D 图像的目标检测 (陈国军, 李开悦).
4. [092]结合显著性检测和图割的 RGBD 图像共分割算法 (李晓阳, 万丽莉, 李赫男, 王升辉).
5. [185]Detection and Tracking of Shadow Edges from Live Videos (吴或, 刘艳丽).
6. [158]融合局部与全局特征的人体动作识别 (唐超, 张苗辉, 李伟, 曹峰, 王晓峰, 童晓红).
7. [089]一种音乐舞蹈视频关键帧提取方法 (石祥滨, 马楠, 代钦, 刘翠微, 刘芳).
8. [179]一种基于 RGB-D 的人体关节点定位方法 (张

青建, 韩建平).

18:30–20:30

Banquet (*Hongrun Hall*)

9. [107]基于 FBS 的卧室在线自动布局算法 (王超, 宋佩化, 贾金原).

大会招待晚宴 (二号楼一层弘润堂)

10. [077]基于 Hawkes 的游戏沉浸体验中的社交因素分析 (向南, 朱凌云, 张明敏).

07:00–12:00 Registration (*Lobby of Building 2*)
大会注册 (二号楼大堂)

08:00–10:00 Session 1-5: Image Processing (*VIP1 Hall*)
分组报告 1-5: 图像处理 (一号楼五层VIP1 厅)

Format: 7 min. for presentation + 3 min. for questions.
 Top Paper: 20 min. for presentation and QA.

Chair: Miao Wang, Tsinghua University

Bio: Dr. Miao Wang is a postdoc research fellow in Computer Science at Tsinghua University. He got his Ph.D degree from Tsinghua University in 2016. Before that, he got Bachelor's degree from Xidian University in 2011. His research interests are in computer graphics and computer vision, especially in content-aware image/video editing, data-driven visual media creation, and deep learning in image processing.

1. [218]Structure-Preserving Bilateral Texture Filtering (*Chengfang Song and Chunxia Xiao*).
2. [031]Low-light Image Deblurring based on Simple Lens System (*Dazhi Zhan and Weili Li*).
3. [190]A Novel Fusion Algorithm for Copy-Move Forgery Detection (*Yanfen Gan, Jimlee Chung and Janson Young*).
4. [192]Fractional Differential and Weighted Guided

Image Filtering for Stereo Matching (*Xianjun Han and Hongyu Yang*).

5. [106]Wide Baseline Image Stitching with Structure-preserving (*Mingjun Cao, Wei Lyu, Zhong Zhou and Wei Wu*).
6. [217]Deep Neural Inverse Halftoning (*Yi Xiao, Chao Pan, Xianyi Zhu, Hai Jiang and Yan Zheng*).
7. [254]Learning on Near Duplicate Image Pairs using Convolutional Neural Networks (*Yi Zhang and Yanning Zhang*).
8. [189]The Rectification of Document Images using Text-features (*Riming Sun, Nannan Li, Shengfa Wang, Lin Ji and Zhenyu Wang*).
9. [132]A Hybrid Approach for Image Edge Detection based on Grey Incidence Analysis and Fuzzy Set (*Hu Xiaohong*).
10. [051]Image tactile perception based on region (*Wenzhen Yang, Jiali Luo, Zhaona Jiang, Xinli Wu, Lujie Dong and Zhigeng Pan*).
11. [Top Paper]Hyper-lapse Creation from Multiple Spatially-overlapping Videos (*Miao Wang*).

08:00–10:00 Session 1-6: Capturing, Tracking & Interaction (*VIP2 Hall*)
分组报告 1-6: 获取/跟踪/交互 (一号楼五层VIP2 厅)

Format: 7 min. for presentation + 3 min. for questions.

Top Paper: 20 min. for presentation and QA.

Chair: *Feng Xu, Tsinghua University*

Bio: *Feng Xu is an assistant professor in School of Software, Tsinghua University. He received a Ph.D. degree in automation and a B.E. degree in physics from Tsinghua University in 2012 and 2007, respectively. Until 2015, He was a Researcher in Internet Graphics group, Microsoft Research Asia. He has authored more than 10 top conference and journal papers in computer vision and graphics, including Siggraph, Siggraph Asia, ICCV, CVPR, TOG, TVCG and TIP. His research interests include face capture and animation, performance capture, 3D reconstruction and virtual reality.*

1. [264]Individual 3D Model Estimation for Realtime Human Motion Capture (*Lianjun Liao, Le Su and Shihong Xia*).
2. [064]A Robust Real-time Hand Detection and Tracking (*Bowen Tang, Xukun Shen, Yong Hu and Qing Fan*).
3. [095]An Estimation Method of Skeleton Proportion for Hand's Motion Capture (*Zhenning Zhang, Na Chen and Weiqing Li*).
4. [124]Research of Human Head Motion and Motion Tracking in Virtual Reality System (*Guan-Feng Li,*

Jian-Bo Zhao and Xiao-Feng Lv).

5. [266]An adaptive KCF tracking via multi-feature fusion (*De-Quan Guo and Sheng-Gui Ling*).
6. [165]Automatic Human Body Feature Extraction and Size Measurement by Random Forest Regression Analysis of Geodesics Distance (*Xiaohui Tan, Xiaoyu Peng and Liwen Liu*).
7. [126]Non-Contact Measurement Method Research based on HoloLens (*Jing Huang, Boxiong Yang and Jiajie Chen*).
8. [032]A Gesture Recognition Algorithm for Intelligent Gesture Teaching Interface Based on Large Database (*Xiaoyan Zhou, Zhiquan Feng, Changsheng Ai, Yingjun Li, Jun Wei, Xiaohui Yang and Yu Qiao*).
9. [050]Exploring the Effects of Group Interaction in Large Display Systems (*Hao Jiang, Chang Gao, Tianlu Mao, Hui Li and Zhaoqi Wang*).
10. [098]A Master-Slave Hand System for Virtual reality Interaction (*Yang Wenzhen, Dong Lujie, Jiang Zhaona, Wu Xinli, Yan Ming and Pan Zhigeng*).
11. **[Top Paper]**3D Dynamic Reconstruction of Human (*Feng Xu*).

08:00–10:00 Session 2-5: VR & Image/Video (VIP3 Hall)

分组报告 2-5: VR 与图像视频 (一号楼五层VIP3厅)

Format: 7 min. for presentation + 3 min. for questions.

Chair: Yong Tang, Yanshan University

Bio: 燕山大学教授，博士生导师，虚拟现实与可视化技术专业委员会委员。主要从事信息可视化，三维重建，虚拟现实等方向的研究工作，承担国家自然科学基金、国家863项目等多项科研项目。发表学术论文20余篇。

1. [280]一种鱼眼视频全景拼接中的亮度补偿算法 (黎吉国, 王悦, 张新峰, 马思伟).
2. [136]基于模板的蒙版自动擦除方法 (王华, 李绅绅, 楚世理, 朱付保, 姚妮, 徐明亮).
3. [284]DM+: 一种融合数字编码的可扫描图像生成技术 (于剑楠, 李青锋, 牛建伟, 徐明亮).
4. [283]单帧图像下的环境光遮蔽估计 (郭雨潇, 陈雷霆, 董悦).
5. [214]基于深度模板的立体树木图像构建方法研究 (董天阳, 陈东方, 姚佳洁, 范菁).
6. [219]多源图像表现迁移 (刘世光, 宋志超).
7. [286]一种面向移动终端图像显示的节能模型 (王勋, 林贤焯, 杨柏林, 张凯丽).
8. [289]基于深度图像分割与物体跟踪的增强现实系统 (杨家博, 杨刚, 杨猛).

9. [258]个性化定制的虚拟课程设计方法研究 (徐明亮, 郭毅博, 郑永康).

08:00–10:00 Session 2-6: AR & MR (VIP4 Hall)

分组报告2-6: 增强现实与混合现实 (一号楼五层MP4厅)

Format: 7 min. for presentation + 3 min. for questions.

Chair: Yue Liu, Beijing Institute of Technology

Bio: 北京理工大学教授，博士生导师，中国图像图形学会青年工作委员会委员，中国光学学会光电技术专业委员会委员，中国仪器仪表学会高级会员，中国仪器仪表学会光机电技术与系统集成分会理事。主要从事虚拟现实与增强现实、微弱光电信号处理、计算机视觉等方向的研究工作，承担国家自然科学基金项目、国家重点研究基础发展计划(973计划)子课题、军队863项目、中国博士后科学基金项目、装甲兵装备技术研究所武器装备国防重点实验室建设项目、空军第三飞行学院、总装备部轻武器论证研究所、海军航空工程学院委托项目等在内的十余项国家和省部级科研项目。发表学术论文50余篇，已申请专利5项；获2002年度国家安全部

科技进步二等奖一项。

1. [212]基于 MR 技术的舰船指控人机交互原型系统研究 (鲁爱国, 董博, 李文, 危瑞奇).
2. [265]一种视觉信息融合数据手套设计研究 (王赋攀, 吴亚东, 杨文超, 侯佳鑫, 廖竞).
3. [022]无人机航拍视频中的车辆检测 (王素琴, 施文豪, 李兆歆, 毛天露).
4. [035]蛟龙号下潜及水下作业过程的交互仿真开发 (张晓曦, 尹勇).
5. [110]多通道混合交互编辑的增强现实演播系统 (蒋兰, 肖双九).
6. [041] 基于物理的可交互性虚拟服装动画模拟 (石敏, 王俊铮, 毛天露, 刘亚宁).
7. [204]VR+药效团: 一种交互可视的虚拟筛选系统 (何高奇, 龚博杰, 何高奇, 龚博杰, 陈诚, 郁明强, 卢兴见, 李洪林).
8. [210]基于深度相机的三维人脸迁移 (陆炎, 张和东, 刘利刚).
9. [152]结合影子障碍物和 ORCA 模型的人群仿真方法 (何高奇, 江东旭, 金祎, 陈琪, 卢兴见).

10. [292]可计算设计技术综述 (许威威, 徐明亮, 周昆).

10:00–10:30 **Tea Break** (*Level 5 of Building 1*)

茶歇 (一号楼五层休息区)

10:00–11:00 Poster Session 2 (*Level 5 of Building 1*)

论文海报分组 2 (一号楼五层)

1. [013]Simulation Research on Complex Modeling Fountain (*Yu-Kun Wang and Hong-Mei An*).
2. [156]Design and implementation of constant pressure water supply monitoring system based on STM32 (*Kun'Ao Zhang and Xin Fang*).
3. [161]Surface Reconstruction of Blood Vessel from 2D Cross-sections with Recurrence Images (*Yongcheng Wei, Rushi Lan, Tianlong Gu, Huadeng Wang and Xiaonan Luo*).
4. [200]Building's Infrared Image Simulation Method Based on Guided Filter Enhancing Feature Prediction (*Li Min, Yuan Xianjie, Luo Zhidan and Li Xing*).
5. [220]Color-guided Point Cloud Coarse Registration Method based on RGBD Data (*Su Benyue, Wei Han, Yusheng Peng and Sheng Min*).
6. [046]An Improved Texture Image Transmission Algorithm (*Yongqian Tan and Fanju Zeng*).
7. [150]Mixed Reality Application: A Framework of Markerless Assembly Guidance System With

- Hololens Glass (*Zhu Teng, He Hanwu, Wu Yueming, Chen He'En and Chen Yongbin*).
8. [191]3-Dimensional convolution based iterative model for motion map generation for representation of discriminative information of video (*Sheeraz Arif and Fida Hussain*).
 9. [004]Research on Intelligent Instrument Character Location Technology Based on Computer Vision (*Qinghui Zhang, Chenxia Wan and Zhongwei Chen*).
 - 10.[145]Deep Feature Screening Method by ICT Cascaded with IPSO for Image Recognition (*Liqiang Pei, Jinyuan Shen and Runjie Liu*).
 - 11.[154]An improved medical image fusion method based on PCNN in NSST domain (*Zhiying Song, Huiyan Jiang and Siqi Li*).
 - 12.[183]A method of virtual laminated moiré generation and graphic recognition (*Xu Zhongguo and Hu Gengsheng*).
 - 13.[232]Multi-person Virtual Rehearsal System Based on Optical Positioning Tracking (*Dongjin Huang, Hejuan Li, Youdong Ding, Wen Tang, Houchao Zu and Haiwei Zhang*).
 - 14.[269]Development of Battlefield Situation Display System Based on ArcGIS Engine Software (*Feng Yang and Jiaqi Wang*).
 - 15.[016]Web-based Visualization of Large-scale 3D City models (*Linlu Gan, Jun Li and Ning Jing*).
 - 16.[043]Web Virtual Reality Oriented Collision Detection (*Pei Yang, Haoxiang Wang and Yuchen Liu*).
 - 17.[213]An infrared image band expansion method based on real measured data (*Min Li and Hong-Wen Xie*).
 - 18.[030]Trcollage: efficient image collage using tree-based layer reordering (*Shiguang Liu, Xiaobing Wang, Ping Li and Junyong Noh*).
 - 19.[056]Semantic Scene Reconstruction using the DenseCRF Model (*Zhixin Ma, Chong Cao and Xukun Shen*).
 - 20.[063]Study on the place cognition in head-mounted virtual geographic environments based on observing behavior experiments (*Shen Shen, Jianhua Gong, Wenhang Li, Jianming Liang and Lin Huang*).
 - 21.[224]Research of key techniques for skateboard games based on Unity3D (*Wei Li, Pengjie Wang, Haiyu Song and Wei Wang*).
 - 22.[263]Battlefield particle effects research (*Renjie Xu, Luhua Zhao and Ming Yang*).
 - 23.[250]一种针对流固耦合场景的泡沫模拟方法 (*刘斯诺, 班晓娟, 王笑琨, 张雅澜, 王犇*).
 - 24.[085]基于 AR 的网络可视化运维系统研究 (*王璐, 赵明, 田东*).

- 25.[010]基于多尺度区域协方差的显著性特征提取方法 (王仕民, 叶继华, 王明文, 左家莉, 刘长红).
- 26.[026]基于FBS的虚拟血管支架置入模型 (黄晨曦, 童建华, 郝泳涛, 邢浩威, 陈飞).
- 27.[257]沉浸式高放废物处置地下实验室工程方案评估系统研究 (侯佳鑫, 吴亚东, 徐阳杰, 李学俊, 王松, 杜东周, 张晓蓉).
- 28.[019]虚拟手术显露操作中的软组织形变研究 (周盼, 王全玉).
- 29.[049]基于人机工效分析的虚拟人运动评价 (张建达, 宋强, 李淳芄).
- 30.[053]面向动作捕捉的非线性时间序列预测方法研究与实现 (郭芸莹, 黄天羽).
- 31.[094]基于姿态的舞蹈动作识别 (石祥滨, 胡静, 代钦, 刘翠微, 刘芳, 邢占伟).
- 32.[108]头戴设备 VR 环境下光滑加权等距面交互建模 (朱晓强, 潘虹艺, 徐浩, 宋磊, 朱梦尧, 王向阳).
- 33.[227]双谱估计方法计算精度分析 (吴文兵, 刘日华, 黄荣华, 熊金泉).

- 34.[248]基于物理的形变模拟中本构模型的研究进展 (曹巍, 吴恩华).
- 35.[285]基于VR移动端的云绘制全息展现 (胡少雄, 蒋杰).
- 36.[021]基于无标记识别的增强现实系统的设计 (高尚兵, 李乾, 潘志庚, 方澄华, 王圣全).
- 37.[061]武器装备虚拟维修训练系统行为树设计与实现 (徐文胜, 武博, 蒋坚鸿).
- 38.[067]VisConnectome: 基于图论且独立运行的脑网络可视化软件 (左然, 田歌, 高志宏, 骆岩林).
- 39.[112]融合多特征的非先验显著区域检测方法 (马技, 马利, 杨晓峰, 牛斌).
- 40.[113]视频多个人体目标长时跟踪三维轨迹生成及其简单行为统计分析 (陈刚, 陈斌, 钱基德).
- 41.[252]基于IFS的单子叶盆栽植物仿真研究 (张凡星, 芦菲娅, 王美丽).
- 42.[296]虚拟现实技术在舰炮行业的应用研究 (王菲菲, 陈永奎).

10:00–10:30**Exhibitors** (*Plaza of Building 1&2*)
成果展览 (一、二号楼外广场)

Same as Saturday afternoon Exhibitors (see pg.23, 24)

10:30–12:30 Session 1-7: VR Techniques and Systems(VIP1 Hall)**分组报告 1-7: VR 技术与系统**(一号楼五层 VIP1 厅)

Format: 7 min. for presentation + 3 min. for questions.
Top Paper: 20 min. for presentation and QA.

Chair: Yin Yan, The University of New Mexico

Bio: Dr. Yin Yang received Ph.D. degree of Computer Science from The University of Texas, Dallas in 2013 (awardee of David Daniel Fellowship Prize, 2013). He was a Research/Teaching Assistant at UT Dallas as well as UT Southwestern Medical Center. His research mainly focuses on real-time physics for computer graphics, game, animation and visualization with a strong emphasis on inter-disciplinary research like VR, CHI and bio/medical science. He was a Research Intern in Microsoft Research Asia during March to June in 2012. Dr. Yang has published over 30 top conference/journal articles in areas of computer graphics, animation, computer aided design, and medical imaging.

1. [277]RFES: A Real-time Fire Evacuation System for Mobile-Web3D (Fengting Yan).
2. [081]A virtual reality video stitching system based on mirror pyramids (Zhu Ling, Wang Wei, Liu Yu, Lai

Shiming and Li Jing).

3. [295]Under the Movement of Head: Evaluating Visual Attention in Immersive Virtual Reality Environment (Honglei Han, Aidong Lu and Unique Wells).
4. [267]Multi-granularity Navigation by Autonomous Tool for Self-moving (Ge Zhang, Haosheng Chen and Yangdong Ye).
5. [102]Real-time Augmented Reality with Occlusion Handling Based on RGBD Images (Xiaozhi Guo, Chen Wang and Yue Qi).
6. [249]A Study on the Factors Affecting Audio-video Subjective Experience in Virtual Reality Environments (Junzhe Zhao, Bo Zhang, Zhaoyu Yan, Jing Wang and Zesong Fei).
7. [207]The Application of Wargaming in the Field of Military Logistics (Zhen-Jiang Guo, Yong Kang and De-Fu He).
8. [261]Affective Virtual Reality System (AVRS): Design and Ratings of Affective VR scenes (Wenzhuo Zhang, Lin Shu, Dan Liao, Jianxiu Jin and Xiangmin Xu).
9. [033]Compression-driven Web3D Lightweight framework for Dense Mesh (Wen Zhou and Jinyuan Jia).
10. [084]Research on Mobile Augmented Reality Technology for Early Childhood Education

(*Shou-Ming Hou and Yan-Yan Liu*).

11. [Top Paper] Acoustic VR in the Mouth: A Real-time Speech-driven Visual Tongue System (*Yin Yang*).

10:30–12:30 Session 1-8: Simulation, Imaging & Visualization (VIP2 Hall)

分组报告 1-8: 仿真图像可视化 (一号楼五层VIP2 厅)

Format: 7 min. for presentation + 3 min. for questions.
Top Paper: 20 min. for presentation and QA.

Chair: Yunhai Wang, Shandong University

Bio: Yunhai Wang is an associate professor in School of Computer Science and Technology at Shandong University. His interests include scientific visualization, information visualization and 3d shape analysis, focusing specifically on automated data visualization.

1. [146] Acquisition and Simulation of Dynamic Flame with Temperature Distribution (*Zhaohui Wu, Xiaobo Wu, Hong Sun and Ying Li*).
2. [034] Research on Hydrodynamic Forces of KCS Container Ship (*Jingjing Lian and Xiao Yang*).
3. [065] Spatial-Temporal Editing for Dynamic Hair Data (*Yijie Wu, Yongtang Bao and Yue Qi*).
4. [038] Research on Efficiency Improvement of CFD Computation Based on Cluster Analysis (*Zou Chang Jun and Yin Yong*).
5. [164] Parametric Design of Visual Simulation Based

on Vega Prime (*Guo Jinliang*).

6. [075] Dynamic Crowd Aggregation Simulation Using SIR Model Based Emotion Contagion (*Nan Xiang, Zhigeng Pan and Lingyun Zhu*).
7. [187] Kinetic simulation of cardiac motion with patient-specific coronary artery vessels attached for PCI simulator (*Zhijun Xie, Shuai Li, Qing Xia and Aimin Hao*).
8. [304] ShorVis: A comprehensive case study of quantum computing visualization (*Zewei Tao, Anying Chen, Yun Pan and Lichen Wang*).
9. [144] Disparity Estimation for Focused Light Field Camera Using Cost Aggregation in Micro-Images (*Zhiyu Ding, Qian Liu and Qing Wang*).
10. [045] Position Estimation from Multi-light Sources based on Single Sphere (*Chao Xu*).
11. [Top Paper] Line Graph or Scatter Plot? Automatic Selection of Methods for Visualizing Trends in Time Series (*Yunhai Wang*).

10:30–12:30 Session 2-7: Visualization (VIP3 Hall)

分组报告 2-7: 可视化 (一号楼五层VIP3 厅)

Format: 7 min. for presentation + 3 min. for questions.

Chair: Xuemei Liu, North China Univ. of Water Resources and Electric Power

Bio: 华北水利水电大学教授, 硕士生导师。主要

从事水利信息化、虚拟现实、计算机图形学等方向的研究工作，承担国家自然科学基金、水利部公益性行业科研专项、国家科技重大专项子课题等多项科研项目。发表学术论文30余篇；获2012年河南省科技进步二等奖，2009年大禹水利科学技术奖一等奖。

1. [096]一种基于WebVR的网络数据三维树形可视化 (林定, 黄国新, 徐颖).
2. [119]高维数据相关性可视分析方法综述 (陈焱, 张聪).
3. [170]面向海洋数据的复杂网络建模及可视化分析 (孙鑫, 李振华, 董军宇, 罗新艳, 杨玉婷).
4. [194]面向联合作战的网电对抗态势可视化系统设计与实现 (张阳, 司光亚, 王艳正).
5. [211]基于多元媒体数据的教育舆情情绪可视化 (梁翊涛, 王长波).
6. [299]基于图的数据关联可视分析方法综述 (陈焱, 杜晓敏).
7. [088]医疗大数据可视化: 复合动态多类决策雷达图 (王艺, 任淑霞, 万千均).
8. [135]质心容量限制 Power 图一体化生成算法 (郑

利平, 路畅, 蔡瑞文, 邓媛媛).

9. [006]三维虚拟植物中非流形结构的紧凑表达 (化蕾, 陈崇成, 唐丽玉, 江颖).
10. [174]一种与时间步长相关的单元细分法及其在弹性动力学边界元分析中的应用 (李源, 张见明).

10:30–12:30 Session 2-8: VR and Sports/others (VIP4 Hall)

分组报告 2-8: VR 与运动/其他 (一号楼五层VIP4 厅)

Format: 7 min. for presentation + 3 min. for questions.

Chair: Jianhua Gong, Institute of Remote Sensing and Digital Earth, CAS, China

Bio: 中科院遥感科学国家重点实验室研究员 (博导), 遥感地学图谱分析研究室主任, 国际数字地球协会虚拟地理环境专业副主任委员、中国地理学会健康地理学专业委员会副主任委员。原创性地提出与发展“虚拟地理环境”概念与系统框架, 虚拟地理环境已成为地理信息科学领域的重要研究前沿, 2015年, “面向地理实验的虚拟地理环境理论与方法研究”获教育部高等学校科学研究优秀成果奖(科学技术)自然科学奖二等奖。研究方向包括地图制图与地学可视化、健康医学

GIS、虚拟地理环境。在国内杂志和会议上发表学术论文160余篇 (SCI 检索论文40余篇), 出版专著4部 (其中译著1部)。

1. [069]基于反馈机制的城市自行车调度预测模型研究 (曹健, 张俊杰, 毛典辉, 蔡强).
2. [166]电子战视景仿真参数化建模研究 (郭金良).
3. [198]基于虚拟仿真技术的道路线形安全性研究 (常绿, 高尚兵).
4. [128]基于字符统计和信息计量的单项文本数据分割 (安辉, 杨雅各, 潘志庚).
5. [298]基于休假排队模型的小区开放效果仿真 (潘文雯, 安冰玉, 池斌博, 张明敏).
6. [273]轻量级家居素材库在线服务平台 (赵双燕, 贾

金原, 周文).

7. [175]层次八叉包围盒的三维模型并行碰撞检测 (孙晓鹏, 马晓萌, 季秀怡, 于丽洁).
8. [099]虚实融合的实景视频 WebGIS 系统 (余亦豪, 谭冲, 周忠, 吴威).
9. [291]大规模地理影像数据处理及 VR 展示 (方文达, 史龙宇, 张明敏, 潘志庚).
10. [275]PF-Q(λ): Mobile-Web3D 地下空间中 Multi-agent 实时逃生路径规划 (闫丰亭, 贾金原).

12:30-14:30

Lunch (Zhiwei Piazza)

自助午餐 (二层知味廊)

14:30–15:20 **Keynote 5** (Shenshi Hall)**特邀报告 V** (二号楼五层盛世堂)

Talk: 制造业强国三大基础要素：新型信息技术、新材料、技术创新体系

Speaker: 干勇院士，中国工程院

Abstract: 要实施“中国制造 2025”，坚持创新驱动、智能转型、强化基础、绿色发展，加快从制造大国转向制造强国。促进工业化和信息化深度融合，开发利用网络化、数字化、智能化等技术，着力在一些关键领域抢占先机、取得突破。我国从迈入制造强国行列到成为具有全球引领影响力的制造强国，需要一个渐进的过程，这其中三大基础要素：新型信息技术、新材料和技术创新体系的发展。提升以虚拟现实、人工智能为代表的新一代信息技术在国家产业发展战略的位置，并处于国际领先水平是我们最重要的任务。

Bio: 中国工程院院士，博士生导师。1994 年至今任连铸技术国家工程研究中心主任，2001 年 4 月至今任钢铁研究总院院长。现兼任中国稀土行业协会名誉会长、中国金属学会理事长等职。2010 年 6 月当选中国工程院副院长，现任十二届全国政协委员及人口、资源与环境委员会副主任，国家新材料产业发展专家咨询委员会主任。

15:20–16:10 **Keynote 6** (Shenshi Hall)**特邀报告 VI** (二号楼五层盛世堂)

Talk: 虚拟现实：科学、艺术和工程

Speaker: 周明全教授，北京师范大学

Abstract: 随着信息技术的发展，虚拟现实在人类发展、社会生活扮演越来越重要的角色，从科学、艺术和工程的多维度的认识虚拟现实，在虚拟现实中发现科学规律、创新艺术领域、推进工程化生产，对于 VR 的研究、发展和推广有重要意义。

Bio: 北京师范大学虚拟现实与可视化技术研究所所长，教育部虚拟现实应用工程研究中心主任，北京市文化遗产数字化保护重点实验室主任，中国虚拟现实与可视化



技术产学研战略联盟理事长。近年来主要研究实体数字化建模、智能处理和重构虚拟环境，形成了实体建模方法、模型计算系统、虚拟现实工程的研究方向，在虚拟医学，文化遗产虚拟工程，虚拟教育等科学前沿方向有创新性研究成就。获得国家科技进步二等奖 1 项，省部科技进步奖 15 项，国家教学成果奖 4 项，发表 SCI、EI 检索学术论文 120 余篇，专著 5 部。

16:10–16:30 **Tea Break** (*Rest Area of Shenshi Hall*)
茶歇 (二号楼五层盛世堂休息区)

16:30–17:20 **Keynote 7** (*Shenshi Hall*)
特邀报告 VII (二号楼五层盛世堂)

Talk: Mitigating Side Effects in Virtual Environments

Speaker: Prof. Henry B.L. Duh, La Trobe University, Australia

Abstract: Virtual Reality (VR) is one of the emerging technologies and prevailing research areas in recent years. It gives numerous opportunities to create new interaction style and user experiences but there are couple of side effects hinder the acceptance and enjoyment of using VR – Simulator Sickness (SS) is one of them. The talk will cover the current research progress and ways potentially to reduce SS.

Bio: Dr. Duh is the Head and Professor of Department of Computer Science and Information Technology at La Trobe University; Adjunct Professor in the Graduate Institute of Journalism at National Taiwan University and Adjunct Professor in the School of Computer Science at Vellore Institute of Technology, India.



Prof. Duh is a Fellow of British Computer Society and the Institution of Engineering and Technology, Companion of Engineer Australia (Fellow Grade), ACM Distinguished Speaker; the Australian National Representative of IFIP TC on HCI; Co-Chair of IEEE

SMC TC on Visual Analytics and Communication; Steering committee member of IEEE ISMAR and ChineseCHI. He is Editor-in-Chief, Journal of Visual Languages and Computing, editorial board members of HCI book series, and published more than 150 conference and journal papers in AR/VR/HCI area. Professor Duh has served the program/organizing committee for IEEE/ACM ISMAR and IEEE Virtual Reality for years. His research focuses on augmented/virtual reality, user experience and interaction design.

17:20–18:10 **Keynote 8** (*Shenshi Hall*)
特邀报告 VIII (二号楼五层盛世堂)

Talk: Interactive Multi-Agent Simulation for Physical and Virtual Worlds

Speaker: Prof. Dinesh Manocha, University of North Carolina

Abstract: From record-setting crowds at rallies, robot swarms in the field, to avatars in social virtual reality (VR), our world is experiencing a continuing rise of complex, distributed systems of independently moving entities. With potential applications such as predicting crowd panic, improving human-robot cooperation, enhancing social interactions, conceptualizing urban layout, computational models to analyze, understand, predict, reproduce, and control collective behaviors of complex dynamical systems are becoming critically important. In this talk, we will present an overview of velocity-space planning algorithms to compute cooperative motion paths and behaviors for a group of independent agents, sharing the same physical world or virtual space. These techniques include

optimization-based strategies for distributed collision avoidance, the principle of least effort for simulating crowds, and data-driven models for capturing differences in personalities. We will also describe related techniques needed to achieve accurate simulations of large-scale crowds and methods to validate simulations against real-world data and demonstrate how velocity-space motion planning can be applied to collision avoidance for distributed robotic systems. We will further illustrate on simulation of human-like crowds, with applications to computer animation, gaming, robotics, pedestrian dynamics, visual surveillance, and architectural analysis. Finally, we show the applications of this work to Social VR.

Bio: Dinesh Manocha is currently the Phi Delta Theta/Mason Distinguished Professor of Computer Science at the University of North Carolina at Chapel Hill. He has co-authored more than 450 papers in the leading conferences and journals on computer graphics, robotics, and scientific computing. He has also served as the program chair for many conferences and as a member of editorial boards for many leading journals in robotics, computer graphics, virtual reality, and geometric modeling. Some of the software systems related to collision detection, GPU-based algorithms and geometric computing developed by his group have been downloaded by more



than 150,000 users and are widely used in the industry. Manocha has received awards including Alfred P. Sloan Fellowship, NSF Career Award, Office of Naval Research Young Investigator Award, and 15 best paper and Test-of-Time awards at the leading conferences. He is a Fellow of ACM, AAAS, and IEEE, and received Distinguished Alumni Award from Indian Institute of Technology, Delhi.

18:10

CLOSED (大会闭幕)

