

# **2016 Nicograph International (NicoInt 2016)**

**Hanzhou, China  
6-8 July 2016**



**IEEE Catalog Number: CFP16G17-POD  
ISBN: 978-1-5090-2306-6**

**Copyright © 2016 by the Institute of Electrical and Electronics Engineers, Inc  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\*This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP16G17-POD
ISBN (Print-On-Demand):	978-1-5090-2306-6
ISBN (Online):	978-1-5090-2305-9

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# NICOGRAPH International 2016

## Table of Contents

Message from Chairs.....	x
Conference Organization.....	xi
Program Committee.....	xii
Keynotes.....	xiii

---

## Visualization

A New Methodology for Blood Vessel Segmentation on Lung CT Images .....	1
<i>Refik Samet and Zeynep Yildirim</i>	
The ET-TREC Algorithm for Retrieving Typhoon Circulation .....	8
<i>Jiayi Xu, Xuanxuan Huang, and Yun Lu</i>	
TimeTubes: Design of a Visualization Tool for Time-Dependent, Multivariate	
Blazar Datasets .....	15
<i>Longyin Xu, Masanori Nakayama, Hsiang-Yun Wu, Kazuho Watanabe,</i>	
<i>Shigeo Takahashi, Makoto Uemura, and Issei Fujishiro</i>	
Druggability Analysis and Prediction Based on Geometric Distances	
between Amino Acid Residues and Protein Surface Pockets .....	21
<i>Makiko Miyoshi, Ayaka Kaneko, Takayuki Itoh, Kei Yura, and Masahiro Takatsuka</i>	
Visualizing Road Appearance Properties in Driving Video .....	25
<i>Zheyuan Wang, Jiang Yu Zheng, and Mehmet Kilicarslan</i>	

## Game&Culture

Development of a Whack-a-Mole Game with Haptic Feedback for Rehabilitation .....	29
<i>Yoshimasa Tokuyama, R. P. C. Janaka Rajapakse, Shougo Miya, and Kouichi Konno</i>	
Motion Interpolation Using Adjectives .....	36
<i>Masaki Oshita, Maho Katsurada, and Aoi Honda</i>	
A Study of Feature Line Extraction and Closed Frame Structure of a Stone Tool from Measured Point Cloud .....	44
<i>Lin Yuan, Katsutsugu Matsuyama, Fumito Chiba, and Kouichi Konno</i>	

UX Gymnastics: Representation of UX Theory and Concepts through Full Body Movement .....	52
<i>Kentaro Go, Atsushi Nakamura, and Yuichiro Kinoshita</i>	
Research on the Elimination of Game Based on Unity3D Technology .....	56
<i>Aibin Huan and Senhao Jia</i>	
Proposal of Methods of Interactive Art to Empower Japanese Local City: The Work "Counters" in Kameyama Triennale .....	60
<i>Yushi Tajima and Yuta Muto</i>	
The Experience Design of Shadow Puppet Culture Based on Tangible Interaction .....	64
<i>Shi Yan and Wang Qiang</i>	

## **Computer Vision and Image Processing**

A Survey of Reversible Data Hiding Schemes Based on Pixel Value Ordering .....	68
<i>Chin-Feng Lee, Chin-Chen Chang, Jian-Jun Li, and Yun-He Wu</i>	
Optimizing Dither Masks for Rendering Smooth Tones on Fabric .....	75
<i>Tetsuya Igarashi, Masahiro Toyoura, and Xiaoyang Mao</i>	
Improvements of Classification Accuracy of Film Defects by Using GPU-accelerated Image Processing and Machine Learning Frameworks .....	83
<i>Hidetoshi Ando, Yuki Niitsu, Masaki Hirasawa, Hiroaki Teduka, and Masao Yajima</i>	
Camera Self-Calibration Based on Multiple View Images .....	88
<i>Zhiyi Zhang and Qiuju Tang</i>	
Efficient Stereo Matching Using Adaptive Manifolds .....	92
<i>Lei Jiang and Hanli Zhao</i>	
Primer Defects Detection on Military Cartridge Cases .....	96
<i>Refik Samet, Anar Bayram, Serhat Tural, and Semra Aydin</i>	
Fast Image Segmentation with Lv Distance between Local Cumulative Histograms .....	100
<i>S.Q. Zhang, W.L. Wang, J.F. Luc, L. Lid, and Wenlei Wang</i>	

## **Media Computing**

Production Technique of Audio-Visual Art Work Using Datamoshing .....	104
<i>Yuichi Ito, Carl Stone, Masashi Yamada, and Shinya Miyazaki</i>	
Processing of Three-Dimensional Models for the Crystal Laser Engraving .....	112
<i>Zengjie Ma, Yigang Wang, and Yukun Li</i>	
Research on Indoor Fire Location Scheme of RFID Based on WiFi .....	116
<i>Caifeng Liu and Yiming Gu</i>	
A Mobile Application for Interactive Exploratory Search of Apparel Products .....	120
<i>Eriko Koike and Takayuki Itoh</i>	

PLUM: A Photograph Browser with a Layout-Upon-Maps Algorithm .....	124
<i>Kana Shiratori, Takayuki Itoh, and Satoshi Nakamura</i>	
MIB: A Bubble Maker Type Media Recorder .....	128
<i>Takayuki Ono, Toshitaka Amaoka, and Hiroki Takahashi</i>	
Spectral Estimation of Munsell Color Charts Using a Multi-Channel Imaging System .....	132
<i>Ping Yang, Jingnan Sun, Jing Cao, Qianyun Ma, and Meifen Fang</i>	

## **Poster Fast Forward**

Parent-Child Product Design Based on Dynamic Programming about Family Child Left Behind .....	134
<i>Qian Sun, Run Fang, and Si Liu</i>	
The Analysis of Physical Visualization in Artistic Creation .....	135
<i>Fei Yu</i>	
Cleaning Textual and Non-textual Mixed Color Document Image with Uneven Shading .....	136
<i>Xiaohua Zhang, Ning Xie, and Masayuki Nakajima</i>	
Video Objects Removal Forgery Detection and Localization .....	137
<i>Ye Yao, Ying Cheng, and Xiaodong Li</i>	
The Research of the Methods How the Brand Image Design Transform Scientifically in the Digital Media Era .....	138
<i>Cheng Lin and Ting Wang</i>	
Automatic Content Generation in Tetris Game Based on Emotion Modeling .....	139
<i>Hongyan Xu, Zhiming Wu, Tao Lin, Ningjiu Tang, and Lixian Hua</i>	
A System for Dynamically Generating Photo Collage Based on Aesthetics .....	140
<i>Yingtao Xie, Lixian Hua, Rui Chen, Tao Lin, and Ningjiu Tang</i>	
A Semi-automatic Technique for Selecting Sets of Photos .....	141
<i>Hiroka Shioya, Takayuki Itoh, and Mariko Hagita</i>	
A Fuzzy-Rule-Based Approach for Webpage Aesthetics Modeling .....	142
<i>Rui Chen, Lixian Hua, Yingtao Xie, Tao Lin, and Ningjiu Tang</i>	
Using Color to Improve the Discrimination and Aesthetics of Treemaps .....	143
<i>Yingtao Xie, Lixian Hua, Rui Chen, Tao Lin, and Ningjiu Tang</i>	
The Research of Kinect Technology Based Interactive Game Product Design for Preschoolers .....	144
<i>Fei Yu and Xueyong Liang</i>	
Towards an Analysis of Voice Features of Game Characters .....	145
<i>Erika Sakai, Akinori Ito, and Takayuki Itoh</i>	
Color Curtains for Providing Enhanced Depth Information .....	146
<i>Masahiro Toyoura and Xiaoyang Mao</i>	

Visualization of Acceleration Ability of Athlete .....	147
<i>Shunta Mizutani, Tsuyoshi Taki, and Junichi Hasegawa</i>	
A Computer-Assistant Color Planning Tool for Virtual Agent Based on Personality Impression and Color Harmony .....	148
<i>Zhiming Wu, Tao Lin, Lixian Hua, Yu Chen, and Ningjiu Tang</i>	
Restricted Error Diffusion for Fabric Binarization .....	149
<i>Takamasa Terada, Masahiro Toyoura, Tetsuya Igarashi, Suguru Saito, and Xiaoyang Mao</i>	
A Study of Tracking the Human Arm Twist Motion .....	150
<i>Rintaro Hosoya, Tera Hasegawa, Takatoshi Naka, Masashi Yamada, and Shinya Miyazaki</i>	
Saliency Map for Images with Leading Lines .....	151
<i>Xiaoyang Mao and Masahiro Toyoura</i>	
3D Simulator of a Rolling Baton on Cylindrical Surfaces .....	152
<i>Yuki Yamada and Akihiro Matsuura</i>	
LMML: Describing Injuries for Forensic Data Visualization .....	153
<i>Malik Olivier Boussejra, Noboru Adachi, Hideki Shojo, Ryohei Takahashi, and Issei Fujishiro</i>	
Compositing Real and Synthetic Images: Using Kinect and Fisheye Camera .....	154
<i>Jiulin Lin and Kohe Tokoi</i>	
Ancient Japanese Big Chess Reproduction: Development of Network Play System for Maka Dai Shogi .....	155
<i>Zhixin Shen, Masanori Fukui, Hisako Hara, Yasuyuki Nakane, and Tomoyuki Takami</i>	

## **Rendering and Perception**

Artist-Drawing Inspired Automatic Sketch Portrait Rendering .....	156
<i>Naye Ji, Shiguang Shan, Zhiguo Ma, and Xilin Chen</i>	
Effect of Surface Geometry on Affordance and Cognitive Load: A Comparison of Different Age Groups .....	164
<i>Matthieu Tessier, Masahiro Ura, and Kazunori Miyata</i>	
Toward Using Hybrid Image as a Visual Acuity Assessment Tool .....	171
<i>Peeraya Sripian</i>	
Analytical Method for Generating Images Reflected on a Cubed Glass .....	178
<i>Nobuhiko Mukai, Kanta Kumagai, and Youngha Chang</i>	
Acquiring Curvature-Dependent Reflectance Function from Translucent Material .....	182
<i>Midori Okamoto, Hiroyuki Kubo, Yasuhiro Mukaigawa, Tadahiro Ozawa, Keisuke Mochida, and Shigeo Morishima</i>	

Development of Impression Evaluation Models for Illustration Learning Support .....	186
<i>Yuichiro Kinoshita, Tomofumi Nakano, and Kentaro Go</i>	
A Supporting System for Creating Camera Blocking of the Humanoid Robot Anime's Battle Scenes .....	190
<i>Hongyi Xu, Yoshihisa Kanematsu, Ryuta Motegi, Naoya Tsuruta, Koji Mikami, and Kunio Kondo</i>	
<b>Author Index</b> .....	194