2009 Second International Conference in Visualisation

(VIZ 2009)

Barcelona, Spain
15-17 July 2009
# Table of Contents

## Visualisation

### 1.1 Visualisation

- **Development, Implementation, and Evaluation of Sonification Tools for Point-and-Surface-Based Data Exploration**
  Wagner José Franchin, Lionis de Souza Watanabe, Haim Levkowitz, and Rosane Minghim
  
- **Visual Discovery in Large-Scale Astrophysical Datasets; Experiences Using the Sloan Digital Sky Survey**

- **Detail-Adaptive Toon Shading Using Saliency**
  Dongwann Kang, Jae-Min Chung, Sang-Hyun Seo, Jong-Soo Choi, and Kyung-Hyun Yoon

- **Customizable Visualization of Multi-omics Data in the Context of Biochemical Networks**
  Peter Droste, Stephan Noack, Katharina Nöhl, and Wolfgang Wiechert

- **On-Line Visualization as a Sequence Grid Application for Parametric Studies**
  Eva Pajorova and Ladislav Hluchý

- **COL.diesis: Transforming Colour into Melody and Implementing the Result in a Colour Sensor Device**
  Jessica Rossi, Francisco Jose Perales, Javier Varona, and Miquel Roca

- **SVis: A Computational Steering Visualization Environment for Surface Structure Determination**
  J. Hernando, J. Martinez, V. Martín, M.F. López, and J.A. Martín-Gago

- **The Use of Dynamic Interactive 3D Images of Biomedical Devices in Education**
  Octavian Ciobanu and Stefano Tomincasa
1.2 Computer Animation & Digital Art

Artificial Life: Creating and Evolving New Modes of Realism .................................................. 47
Mark Guglielmetti

The Birth of Elinor: A Collaborative Development of a Game Based System for Stroke Rehabilitation ................................................................. 52
Anna-Sofia Alklind Taylor, Per Backlund, Henrik Engström, Mikael Johannesson, and Mikael Lebram

Considerations for Believable Emotional Facial Expression Animation ........................................ 61
Robin James Stuart Sloan, Malcolm Cook, and Brian Robinson

Creating Realistic Human Motions with PBSO ................................................................. 67
Zhihua Chen, Shengxi Wu, Hong Zheng, Wei Meng, and Xin Xu

Effects of Character Geometric Model on Perception of Sign Language Animation ................................................................. 72
Nicoletta Adamo-Villani, Ronnie Wilbur, Petra Eccarius, and Laverne Abe-Harris

VOF Method for Fluids and Solids on Octree Structure ................................................................. 76
Roman Ďurlikovič and Milan Kupka

Visualization in Built and Rural Environments

Web-Mediated Student Peer Group Assessment of Building Information Modelling Performance .................................................................................. 85
Nick Evans and John Counsell

Fuzzy Logic Based Built Environment Impact Assessment for Urban Regeneration Simulation .................................................................................. 90
Syed Adnan Yusuf, Panagiotis Georgakis, and Christopher Nwagboso

Trust-Oriented Multi-visualization of Cooperation Context ........................................................................... 96
Annie Guerriero, Sylvain Kubicki, and Gilles Halin

The Atlantic College Case Study—Measuring Performance to Evaluate Building Simulation and Enhance Student Learning ........................................................................... 102
J. A. M. Counsell, A. Gillard, and J.R. Littlewood

Evaluation of 3D Visualisation in the Virtual Environmental Planning Systems Project .................................................................................. 108
John Counsell, Andrew Richman, and Alan Holding

Learning Contract Management and Administration Using a Simulated Game Environment .................................................................................. 114
Andrew Agapiou, Paul Maharg, and Emma Nicol

A Qualitative Evaluation of Implementing Virtual Prototyping in Construction .......................... 121
Stephen C. W. Kong and Heng Li

Attractive Visualization Influences the Perceived Quality of the Living Environment .................................................................................. 127
Joske M. Houtkamp, Stefan Colijn, and Arno Bouwman
3D ePortfolios: Challenges and Opportunities for the Display of Interactive Models of Building Designs ................................................................. 132

  Robina Hetherington and Kevan Williams

Drivers for Change in Construction Procurement and its Impact on Management ........................................................................................................ 138

  James Harty and Richard Laing

BioMedical Visualization
Exploring 2D/3D Input Techniques for Medical Image Analysis ................................................................. 147

  Elena Zudilova-Seinstra, Peter Sloot, Patrick de Koning, Avan Suinesiaputra, Rob van der Geest, and Johan Reiber

3D Visualization of Medical Image Data Employing 2D Histograms ........................................................................ 153

  Stefan Wesarg and Matthias Kirschner

A Chest Wall Model Based on Rib Kinematics ........................................................................................................ 159

  Anne-Laure Didier, Pierre-Frédéric Villard, Jacques Saadé, Jean-Michel Moreau, Michaël Beuve, and Behzad Shariat

Processing, Visualization and Analysis of Medical Images of the Heart: An Example of Fast Prototyping Using MeVisLab ........................................................................ 165

  Samuel Silva, Beatriz Sousa Santos, Joaquim Madeira, and Augusto Silva

Visual Analytic Methods for Hereditary Breast and Ovarian Cancer Risk Assessment ................................................................. 171

  Brian Drohan and Georges Grinstein

Identification of Cancerous Lesions in Unconstrained Images ........................................................................ 177

  John Cowell and Joaquim Mesquita da Cunha Viana

Geometric Modelling and Imaging
Geometrical Features Based Approach for the Classification and Recognition of Handwritten Characters ........................................................................ 185

  Saima Farhan, Muhammad Abuzar Fahiem, and Huma Tauseef

Segmentation of Printed Urdu Scripts Using Structural Features ........................................................................ 191

  Hamna Malik and Muhammad Abuzar Fahiem

Adaptation of HVS Sensitivity for Perceptual Modelling of Wavelet-Based Image Compression ................................................................. 196

  Ghada Al-Hudhud

2D Geometric Constraint Solving: An Overview ........................................................................ 201

  Samy Alt-Aoudia, Mehdi Bahriz, and Lyes Salhi

A Perceptual Data Repository for Polygonal Meshes ........................................................................ 207

  Samuel Silva, Beatriz Sousa Santos,Carlos Ferreira, and Joaquim Madeira

Recognition and Translation of Hand Gestures to Urdu Alphabets Using Geometrical Classification ................................................................. 213

  Huma Tauseef, Muhammad Abuzar Fahiem, and Saima Farhan

Total or Selective Decompression of a Compressed Plane Triangulation ........................................................................ 218

  Miguel Guardiola Marín and Raquel Viana Fernández
Personalized Human Emotion Classification Using Genetic Algorithm ........................................224
  M. Rizon, D. Hazry, M. Karthigayan, R. Nagarajan, N. Alajlan, and Y. Sazali

Progressive Geometry-Driven Compression for Triangle Mesh Based on Binary Tree ........................................229
  Liu Hongnian, Liu Bo, and Zhang Hongbin

Real Time Object Detection and Motion ..................................................................................235
  Muhammad Sarfraz and Amina Taimur

Simplification of Polygonal Models for Distributed Visualization ........................................241
  Hessah Alsaaran and Muhammad Hussain

Position Error Inspection for Mounting Wafer in Cleaning Device Using the Radial Shape Board ........................................247
  Jung Woo Lee, Byung-Gook Lee, Joon-Jea Lee, and Jungho Yoon

Classification and Design of Islamic Geometric Patterns Using Computer Graphics ..................253
  Ahmad M. Aljamali

Author Index