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Table of Contents

Table of Contents iii

International Programme Committee v

Author Index vii

Keynotes viii

Vision and Learning

Topological Connected Chain Modelling for Classification of Mammographic Microcalcification 1
Minu George, Erika R. E. Denton, and Reyer Zwiggelaar

Combining Accumulated Frame Differencing and Corner Detection for Motion Detection 7
Nahlah Algethami and Sam Redfern

Groupwise Non-rigid Image Alignment With Graph-based Initialisation 15
Ahmad Aal-Yhia, Paul Malcolm, Otar Akanyeti, Reyer Zwiggelaar, and Bernard Tiddeman

A Deep Learning Approach to No-Reference Image Quality Assessment For Monte Carlo Rendered Images ... 23
Joss Whittle and Mark W. Jones

Graphics

Keys-to-Sim: Transferring Hand-Crafted Key-framed Animations to Simulated Figures using Wide Band Stochastic Trajectory Optimization 33
Dominik Borer, Martin Guay, and Robert W. Sumner

Image Based Proximate Shadow Retargeting 43
Llogari Casas, Matthias Fauconneau, Maggie Kosek, Kieran Mclister, and Kenny Mitchell

Physically-based Sticky Lips 51
Matthew Leach and Steve Maddock

Screen Space Particle Selection 61
Marcel Köster and Antonio Krüger

Visualization I

GPU-Assisted Scatterplots for Millions of Call Events 71
Dylan Rees, Richard C. Roberts, Robert S. Laramee, Paul Brookes, Tony D'Cruze, and Gary A.Smith

RiverState: A Visual Metaphor Representing Millions of Time-Oriented State Transitions 81
Richard C. Roberts, Dylan Rees, Robert S. Laramee, Paul Brookes, Gary A. Smith

Towards a Survey of Interactive Visualization for Education 91
Elif E. Firat and Robert S. Laramee

Table of Contents

Short Papers

Image Inpainting for High-Resolution Textures using CNN Texture Synthesis 103
Pascal Laube, Michael Grunwald, Matthias O. Franz, and Georg Umlauf

Segmenting Teeth from Volumetric CT Data with a Hierarchical CNN-based Approach 109
Philipp Marten Macho, Nadja Kurz, Adrian Ulges, Robert Brylka, Thomas Gietzen, and Ulrich Schwanecke

Voronoi Tree Maps with Circular Boundaries 115
Abdalla G. M. Ahmed

Single ImageWatermark Retrieval from 3D Printed Surfaces via Convolutional Neural Networks 117
Xin Zhang, Qian Wang, and Ioannis Ivrissimtzis

Evolutionary Interactive Analysis of MRI Gastric Images Using a Multiobjective Cooperative-coevolution Scheme 121
Shatha F. Al-Maliki, Évelyne Lutton, François Boué, and Franck P. Vidal

Visualization II

Cartograms with Topological Features 127
Chao Tong, Liam McNabb, and Robert S. Laramee

Spectrum: A C++ Header Library for Colour Map Management 135
Richard C. Roberts, Liam McNabb, Naif AlHarbi, and Robert S. Laramee

SoS TextVis: A Survey of Surveys on Text Visualization 143
Mohammad Alharbi and Robert S. Laramee

Visualization III and VR

Knowledge-based Discovery of Transportation Object Properties by Fusing Multi-modal GIS Data 153
Pedro Eid Maroun, Sudhir Mudur, and Tiberiu Popa

When Size Matters: Towards Evaluating Perceivability of Choropleths 163
Liam McNabb, Robert S. Laramee, and Max Wilson

Virtual Reality: A Literature Review and Metrics-based Classification 173
Peter Ankomah and Peter Vangorp

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Author Index

Aal-Yhia, Ahmad 15
Ahmed, Abdalla G. M. 115
Akanyeti, Otar 15
Algethami, Nahlah 7
Alharbi, Mohammad 143
AlHarbi, Naif 135
Al-Maliki, Shatha F. 121
Ankomah, Peter 173
Borer, Dominik 33
Boué, François 121
Brookes, Paul 71, 81
Brylka, Robert 109
Casas, Llogari 43
D'Cruze, Tony 71
Denton, Erika R. E. 1
Fauconneau, Matthias 43
Firat, Elif E. 91
Franz, Matthias O. 103
George, Minu 1
Gietzen, Thomas 109
Grunwald, Michael 103
Guay, Martin 33
Ivrissimtzis, Ioannis 117
Jones, Mark W. 23
Kosek, Maggie 43
Köster, Marcel 61
Krüger, Antonio 61
Kurz, Nadja 109
Laramee, R. S. 71, 81, 91, 127, 135, 143, 163
Laube, Pascal 103
Leach, Matthew 51
Lutton, Évelyne 121
Macho, Philipp Marten 109
Maddock, Steve 51
Malcolm, Paul 15
Maroun, Pedro Eid 153
Mclister, Kieran 43
McNabb, Liam 127, 135, 163
Mitchell, Kenny 43
Mudur, Sudhir 153
Popa, Tiberiu 153
Redfern, Sam 7
Rees, Dylan 71, 81
Roberts, Richard C. 71, 81, 135
Schwanecke, Ulrich 109
Smith, Gary A. 71, 81
Sumner, Robert W. 33
Tiddeman, Bernard 15
Tong, Chao 127
Ulges, Adrian 109
Umlauf, Georg 103
Vangorp, Peter 173
Vidal, Franck P. 121
Wang, Qian 117
Whittle, Joss 23
Wilson, Max 163
Zhang, Xin 117
Zwiggelaar, Reyer 1, 15

Keynote

Visual Analytics for the Direct Support of Value Assessment

Timos Kipouros

Abstract

In modern industries the design and optimisation in complex multidisciplinary design spaces is crucial. It is a process involving the simultaneous consideration of conflicting multiple criteria stemming from different domains and stakeholders. Computational models and simulations are utilised extensively, and multidimensional visualisation, as will be shown, can play a key role exploiting our fantastic pattern recognition ability in discovering relational information in such datasets and sequentially guiding the complex engineering design decisions. This will happen by identifying the connections between different stakeholder expectations and engineering technical properties satisfying a number of physical, geometrical, and any type of constraints. Though the examples are from the aerospace industry, the methodology is widely applicable.

Biographical Sketch

Timos is a Senior Research Associate in the Engineering Design Centre at the University of Cambridge and the lead researcher in the Change Management and Computational Design groups. Timos is also a Lecturer in Computational Engineering Design Optimisation in Cranfield University. His primary research focus is in the areas of multi-physics optimisation methods, change propagation in engineering design, value driven design, interactive computational design, and multidimensional engineering data visualisation and analysis.

Capstone

Visualisation in Microscopy - Making Sense of the Invisible World in 3D

Richard Johnston

Biographical Sketch

Professor in materials science and engineering at Swansea University in the UK. Co- Director of the £10M Advanced Imaging of Materials (AIM) facility at Swansea, of the £13.7M Materials and Manufacturing Academy for postgraduate training, and the STFC Regional Beamline-Bridging Facility. Founder and Director of the Research as Art awards, which have reached over 50 million people worldwide since 2009, A Software Sustainability Institute Fellow, and a previous British Science Association Media Fellow at Nature.