Electronic Visualisation and the Arts (EVA 2014)

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Editors
Dr. Kia Ng
Prof. Jonathan P. Bowen
Dr. Sarah McDaid
The Electronic Visualisation and the Arts London 2014 conference (EVA London 2014) is co-sponsored by the Computer Arts Society (CAS) and British Computer Society (BCS) - the Chartered Institute for IT, of which the CAS is a specialist group. 2014 marks the 25th Anniversary of EVA London. Over the last two decades, the EVA conference has established itself as one of London’s most innovative and interdisciplinary conferences in the field of digital visualisation. The papers in this volume touch on music, performance, electronic art, imaging technology, medical visualisation, museums and their collections, virtual communities, landscape visualisation, augmented reality, 3D imaging, interfaces, and enhanced reality, as well as other areas. The latest research by established scholars, early career researchers, practitioners, and students can be found here.

For more information about EVA 2014, visit www.eva-london.org or search on Twitter for EVALondonConf.
2014 marks the 25th Anniversary of EVA London! Over the last two decades, the EVA London conference on Electronic Visualisation and the Arts has established itself as one of the United Kingdom’s most innovative and interdisciplinary conferences. It brings together a wide range of research domains to celebrate a diverse range of interests with a specialised focus on visualisation.

The EVA London 2014 conference presents a wide spectrum of papers, presentations, demonstrations, a research workshop and a special pre-conference event: “V&A Digital Futures meets EVA London”. It is a forum where the sciences, arts, humanities, and performance, are equally at home. EVA London 2014 presents 76 papers and abstracts from 24 countries, by researchers inside and outside academia, from graduate artists, PhD students, seasoned industry professionals, established scholars, and senior researchers, who value EVA London for its interdisciplinary community. This year, the conference features three keynote speakers: Prof. Sally-Jane Norman from the Attenborough Centre for the Creative Arts, University of Sussex; Dr Lizzie Jackson from Ravensbourne; and Tom Wickham-Jones from Wolfram Research.

The proceedings has resulted from a highly selective peer review process, fitting as many excellent submissions as possible into the limited timetable of the conference. The papers in this volume touch on music, performance, electronic art, imaging technology, medical visualisation, museums and their collections, virtual communities, landscape visualisation, augmented reality, 3D imaging, interfaces, and enhanced reality, as well as other interdisciplinary areas.

EVA London is part of a larger network of EVA international conferences. In the past twenty years, EVA events have been held in Athens, Beijing, Berlin, Brussels, California, Cambridge (both UK and USA), Dallas, Delhi, Edinburgh, Florence, Gifu (Japan), Glasgow, Harvard, Jerusalem, Kiev, Laval, London, Madrid, Montreal, Moscow, New York, Paris, Prague, Thessaloniki, and Warsaw. Further venues for EVA conferences are very much encouraged by the EVA community.
Editors

This conference was edited by:

**Dr. Kia Ng**, PhD, FBCS, FRSA, FloD, CEng, CSci, is Director of the Interdisciplinary Centre for Scientific Research in Music (ICSRiM) at the University of Leeds. Kia is involved in several research domains including gestural interfaces, interactive multimedia, computer vision, document imaging and computer music, in collaboration with many European and international organisations and individuals in the field. Large-scale projects include i-Maestro on technology-enhanced learning (coordinator), CASPAR on digital preservation and AXMEDIS on cross-media with over 20M Euro research funding. Kia has over 200 publications and presented keynotes and invited lectures in over 33 countries. [www.kcng.org](http://www.kcng.org)

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Papers:

Seeing music and performance

Alexander Deweppe, Nuno Diniz, Pieter Coussement and Marc Leman  Engaging Audiences through a Participatory Design Approach with the Interactive Music Installation 'SoundField'
http://dx.doi.org/10.14236/ewic/EVA2014.1

Anna Shvets and Charles de Paiva Santana  Modelling Arvo Pärt's Music with OpenMusic
http://dx.doi.org/10.14236/ewic/EVA2014.2

Kia Ng, Joanne Armitage and Alex McLean  The Colour of Music: Real-time Music Visualisation with Synaesthetic Sound-colour Mapping
http://dx.doi.org/10.14236/ewic/EVA2014.3

Keynote

Sally Jane Norman  Live Engagement with Data
http://dx.doi.org/10.14236/ewic/EVA2014.4

Electronic art

João dos Santos  Moving Drawings. A Digital Mediation for the Linear Drawing Metaphor: the Line as the Trace Left by a Moving Point (Rawson)
http://dx.doi.org/10.14236/ewic/EVA2014.5

Iris Asaf  The Poetic and the Thoughtful: The Creative Poiesis of Algorithmic Art and Design
http://dx.doi.org/10.14236/ewic/EVA2014.6

Michael Lesk and Annamarie Klose  Summarising Pictures
http://dx.doi.org/10.14236/ewic/EVA2014.7

Eunice Goncalves Duarte  X Stories of a Technology Breakdown: How Digital Tools Influence Aesthetic and Artistic Options
http://dx.doi.org/10.14236/ewic/EVA2014.8
Imaging technology for culture

David Lyons and David R. Flatla Eye For An Eye http://dx.doi.org/10.14236/ewic/EVA2014.9

Francesca Uccheddu, Anna Pelagotti, Vito Cappellini and Emanuela Massa 3D Technologies for Measurement of Painting Surface Deformations: A Case Study http://dx.doi.org/10.14236/ewic/EVA2014.10

Clare Brennan and Lynn Parker Animating Dance and Dancing with Animation: A Retrospective of Forever Falling Nowhere http://dx.doi.org/10.14236/ewic/EVA2014.11

Demonstration

Lee Wagstaff Transforming Photographs into Sculptures http://dx.doi.org/10.14236/ewic/EVA2014.12

Visualising the body


Jiann Hughes BB got your Beat: Visualising Heartbeats within a Biosensing Artwork http://dx.doi.org/10.14236/ewic/EVA2014.14

Angela Chang, Selene Mota and Henry Lieberman GestureNet: A Common Sense Approach to Physical Activity Similarity http://dx.doi.org/10.14236/ewic/EVA2014.15

Demonstration

Licia Calvi, Hans Bouwknegt, Moniek Hover, Frank Ouwens, Juriaan van Waalwijk and Albert van Schendel Experiencing Van Gogh’s Heritage: A Case Study http://dx.doi.org/10.14236/ewic/EVA2014.16

Laura Carletti, Dominic Price, Gabriella Giannachi, Rebecca Sinker, Derek McAuley and John Stack
Research workshop

Elena Gaevskaya and Tayanan Laska  Ways of Access to Virtual Cultural Heritage  
http://dx.doi.org/10.14236/ewic/EVA2014.18

Elke Reinhuber  Counterfactuals in Media Arts  
http://dx.doi.org/10.14236/ewic/EVA2014.19

Lorna Moore  In[bodi]mental: Body Swapping - A Choreography of Shared Selves using Real-time Video  
http://dx.doi.org/10.14236/ewic/EVA2014.20

Beth Woodward Alvarez and Ramon Palau  The Performance Effects of Online Video Tutorials on Secondary School String Orchestra Students  
http://dx.doi.org/10.14236/ewic/EVA2014.21

Rehan Zia  Tonemapping Multi-shot Digital Photographs of Real World Environments  
http://dx.doi.org/10.14236/ewic/EVA2014.22

Hannah L. Jacobs  Visualising the New Woman  
http://dx.doi.org/10.14236/ewic/EVA2014.23

Beatrice Bretherton and Roger Watt  Music and Motion  
http://dx.doi.org/10.14236/ewic/EVA2014.24

James Rosindell  Big Data Visualisation with Fractal Geometry  
http://dx.doi.org/10.14236/ewic/EVA2014.25

Anna Nazarova  How can Typography be Represented in an Alter-modernity Context?  
http://dx.doi.org/10.14236/ewic/EVA2014.26

Clare Plumley  Brain in Pain: Body Mapping, Pain Visualisation and Mapping the Invisible  
http://dx.doi.org/10.14236/ewic/EVA2014.27

Leonie Dunlop  Beasts and Bodies: Visualising the Landscape through Place-names  
http://dx.doi.org/10.14236/ewic/EVA2014.28

Dion Rezki  Socio-digital-visualisations as Positive-reinforcement Mechanisms for Encouraging Pro-social and Constructive Behaviours  
http://dx.doi.org/10.14236/ewic/EVA2014.29

Museums and collections
Suzanne Keene Museums and the Digital: The View from the Micro Gallery  
http://dx.doi.org/10.14236/ewic/EVA2014.30

Alison Taubman Cybraphon: Collecting the Physical or the Digital at National Museums Scotland?  
http://dx.doi.org/10.14236/ewic/EVA2014.31

Derek J. Smith Trench Gothic: The Computer Visualisation of a Disturbing Great War Artwork  
http://dx.doi.org/10.14236/ewic/EVA2014.32

Keynote

Lizzie Jackson ‘Findability’: A Central Issue for Quality Media in a Networked World  
http://dx.doi.org/10.14236/ewic/EVA2014.33

Communities and the digital

Camille C. Baker ICT&ART Connect: Connecting ICT & Art Communities - Early Outcomes  
http://dx.doi.org/10.14236/ewic/EVA2014.34

Angela Chang, Lidet Tilahun and Cynthia Breazeal Visualisations of Data from the Literacy Tablet Reading Project in Rural Ethiopia  
http://dx.doi.org/10.14236/ewic/EVA2014.35

Moshe Caine, Eyal Tagar and Idit Ben Or Unfolding Communities: Imaging the Past, Envisioning the Future  
http://dx.doi.org/10.14236/ewic/EVA2014.36

Joanna Moll Surveillance through Social Networks along the US-Mexico Board  
http://dx.doi.org/10.14236/ewic/EVA2014.37

Workshop

Lampros Stergioulas, Munir Abbasi and Carl Smith Technology Futures for the Creative Industries: Presenting the Cr-eAM Roadmaps  
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Visualising landscapes
Kieran Baxter  Grounding the Aerial: The Observer's View in Digital Visualisation for Built Heritage  
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Daniel Buzzo  Time Travel: Time Dilation  
http://dx.doi.org/10.14236/ewic/EVA2014.40

Stuart Dunn  Crowd-Sourced Cartography to Visualise the Forgotten: Mapping Britain's Corpse Roads  
http://dx.doi.org/10.14236/ewic/EVA2014.41

Tessa Morrison and Mark Rubin Using Visualisation to Test Historical Utopian Cities on a Modern Audience  
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Cameron Beckfield and J C Diaz  Tulsa's Art Deco Cross-Platform Mobile Tour App  
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Amy Robinson  The Zandra Rhodes Digital Study Collection Project at the University for the Creative Arts  
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Jonathan Weinel, Stuart Cunningham, Nathan Roberts, Shaun Roberts and Darryl Griffiths  EEG as a Controller for Psychedelic Visual Music in an Immersive Dome Environment  
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Toby Gifford, Simon Linke and Leah Barclay  Listening to the Thames  
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Imaging, music and performance

Lindsay MacDonald, Ali H. Ahmadabadian, Stuart Robson and Ian Gibb  High Art Revisited: A Photogrammetric Approach  
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Helena Bisby, Adam Cooper, Stephen James, Alec Robertson and Kia Ng  A Tactile Audio Visual Instrument using Sound Source Localisation  
http://dx.doi.org/10.14236/ewic/EVA2014.48

Damian Keller, Nuno Otero, Victor Lazzarini, Marcelo Soares Pimenta, Maria Helena de Lima, Marcelo Johann and Leandro Costalonga  Relational Properties in Interaction Aesthetics: The Ubiquitous
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Chiara Passa  The Widget Art Gallery  http://dx.doi.org/10.14236/ewic/EVA2014.51

Frederico Visi, Duncan Williams, Eduardo Miranda and Giovanni Dothel  An Immersive Media Model of Amyotrophic Lateral Sclerosis  http://dx.doi.org/10.14236/ewic/EVA2014.52

Terry Trickett  Visual Music  http://dx.doi.org/10.14236/ewic/EVA2014.53

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Leigh Garrett, Robin Burgess, Amy Robinson and Anne Spalding  Exploring Research Data Management in the Visual Arts  http://dx.doi.org/10.14236/ewic/EVA2014.54

EVA London birthday panel

James R. Hemsley  Twenty Five Years Ago: Still Looking at the Future  http://dx.doi.org/10.14236/ewic/EVA2014.55

Augmented reality

Kevin Whiteside, Gentry Atkinson, Mary Mikel Stump, Dan Tamir and Grayson Lawrence  Musing: Adaptable Mobile Augmented Reality Application for Museums and Art Galleries  http://dx.doi.org/10.14236/ewic/EVA2014.56

Roma Patel and Deborah Tuck  Narrative Approaches to Design Multi-screen Augmented Reality Experiences  http://dx.doi.org/10.14236/ewic/EVA2014.57

Carl H. Smith  Context Engineering Hybrid Spaces for Perceptual Augmentation
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Tom Wickham-Jones Exploring the Beauty of Mathematics with Mathematica
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3D imaging

Jeni Maleshkova and Matthew Purver Beyond the White Cube: Presentation of Visual Art in Interactive 3D Environments
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Hartmut Schwandt and Joachim Weinhold 3D Technologies for Museums in Berlin
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Bernd Breuckmann 25 Years of High Definition 3D Scanning: History, Start of the Art, outlook
http://dx.doi.org/10.14236/ewic/EVA2014.61

Martin Doerr, Ioannis Chrysakis, Anastasia Axaridou, Maria Theodoridou, Christos Georgis and Emmanuel Maravelakis A Framework for Maintaining Provenance Information of Cultural Heritage 3D-models
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Renick Bell Data Visualisation Tools for Enhancing Live Coding Usability and Audience Experience
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David Bouchard Data Materiality http://dx.doi.org/10.14236/ewic/EVA2014.64

Kristina Mettus and Anna Nazarova Fundamental Research in Cosmoparticle Physics and the Visualisation: Symbiosis or graphics and conceptualisation
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Jeremy C. Creasey Creating Pictures in Quick Response Codes
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Oliver Gingrich, Evgenia Emets and Alain Renaud    Transmission - Sonifying, Visualising and Analysing Neural Activity through Telepresence  
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Calliope Georousi    Innovating iTV Browsing: Designing an Affective Search Engine  
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Murat Germen    The Unstoppable Rise of Mobile Imaging and Aesthetics  
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Ajay Kumar Tiwari    Visualisation Strategies in Abstract Animation  
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Andre Murnieks    Connecting with Users through Interactive Prototyping: Understanding User Behaviour through Building the Black Box and its Electronic Innards  
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Gretchen Andrus Andrew    Wearable Technology and Electronic Visualisation of Artistic Process: Google Glass meets Fine Art Painting  
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Digital enhanced reality

Rikke Schmidt Kjærgaard and Ebbe Sloth Andersen    Seeing Streptococcus pneumoniae, a Common Killer Bacteria  
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Jonathan P. Bowen and Tula Giannini    Digitalism: The New Realism?