EVA London 2020
Proceedings of EVA London 2020

BCS London

6th July – 9th July 2020

Editors:

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Nick Lambert

Preface

The *Electronic Visualisation and the Arts* London 2020 Conference (EVA London 2020) is co-sponsored by the Computer Arts Society (CAS) and BCS, the Chartered Institute for IT, of which the CAS is a Specialist Group. 2020 marks the 30th anniversary of EVA London, which was first held at Imperial College London in 1990.

Of course, this is a difficult time for all conferences, with the coronavirus pandemic. The EVA London 2020 Conference was originally planned for 6–10 July 2020. This has been delayed with planned dates of 16–20 November 2020 for an entirely online event. However we have decided to go ahead with publishing the 2020 proceedings, both online, with open access via ScienceOpen, and also in our traditional printed form. Details of hardcopy publication dates and conference updates will be found on the EVA London website.

Over recent 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 set of interests, with a specialised focus on visualisation.

The long and short papers in this volume cover varied topics concerning the arts, visualisations, and IT, including 3D graphics, animation, artificial intelligence, creativity, culture, design, digital art, ethics, heritage, literature, museums, music, philosophy, politics, publishing, social media, and virtual reality, as well as other related interdisciplinary areas.

The EVA London 2020 proceedings presents a wide spectrum of papers, demonstrations, Research Workshop contributions, other workshops, and for the fifth year, the EVA London Symposium, with invited contributors.

This year for the conference in July, a number of associated evening events were planned, on Women in the Digital Arts, a 30th birthday celebration for EVA, and Lumen Art Prize long list announcements. We plan to include what we can either in November or at EVA London 2021. A feature of EVA London, started in 2018, has been a *Research in Education Day*, immediately after the main conference, bringing together students and associated staff from universities in the London area to enable presentations and networking. In the circumstances, we now aim to hold this in conjunction with EVA London 2021.

As in previous years, there are Research Workshop contributions in this proceedings, aimed at encouraging participation by postgraduate students and early career artists. The Research Workshop contributors are offered bursaries to aid participation. In particular, EVA London is again liaising with Art in FLUX, a London-based group of digital artists.

The EVA London 2020 proceedings includes long papers and short "poster" papers from international researchers inside and outside academia, from graduate artists, PhD students, industry professionals, established scholars, and senior researchers, who value EVA London for its interdisciplinary community. The conference also features keynote talks in normal times.

This publication has resulted from a selective peer review process, fitting as many excellent submissions as possible into the proceedings. This year, submission numbers were similar to the high numbers in the previous three years, with an excellent standard overall. It is pleasing to have so many good proposals from which to select the papers that have been included.

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

As noted earlier, this proceedings is a record of accepted submissions to EVA London 2020. Given the uncertainties of the pandemic crisis, we are also encouraging online presentations, which can be linked from the EVA London 2020 website.

It is sad to note that the wide EVA community has already been affected by the coronavirus pandemic. We are very sorry to report that Kim Veltman, twice a keynote speaker at EVA London Conference, most recently in 2017, sadly passed away due to COVID-19 on 1 April 2020. Anyone who met Kim will know his unique sense of humour and remember that twinkle in his eye during any conversation with him. This proceedings is dedicated to his memory. Our heart goes out to his family.

Dedicated to Kim H. Veltman
(5 September 1948 – 1 April 2020)
Historian of science and art

https://en.wikipedia.org/wiki/Kim_H._Veltman

Acknowledgements

EVA London 2020 gratefully acknowledges:

Committee

- ❖ **EVA London 2020 Conference Chair:**   Graham Diprose
- ❖ **BCS CAS Chair:**   Nick Lambert
- ❖ **EVA London 2020 Programme Co-Chairs:**   Jon Weinel
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- ❖ **EVA London 2020 Technical Support:**   BCS, The Chartered Institute for IT
- ❖ **EVA International Liaison:**   Terry Trickett
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Graham	Diprose Independent
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Nick Lambert	Ravensbourne University London
Sarah McDaid	London South Bank University
Gareth Polmeer	Royal College of Art
Aphra Shemza	Art in FLUX
Carl Smith	Ravensbourne University London
Terry Trickett	Trickett Associates
Jon Weinel	London South Bank University

List of Reviewers

The people listed below reviewed submissions for the EVA London 2020 Conference and the Organising Committee is very grateful for their voluntary help in the selection process.

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Tula Giannini	Teresa Numerico	

Additional reviews were provided by Richard Coleman, covering those unable to do reviewing.

Papers:

Digital Culture and Museums

Jonathan P. Bowen, Tula Giannini, Gareth Polmeer, Rachel Falconer, Arthur I. Miller & Stuart Dunn   Computational Culture and AI: Challenging human identity and curatorial practice
http://dx.doi.org/10.14236/ewic/EVA2020.1

Jonathan P. Bowen   A Personal View of EVA London: Past, Present, Future
http://dx.doi.org/10.14236/ewic/EVA2020.2

Tula Giannini, Jonathan P. Bowen   Computing the Future: Digital encounters in art and science when da Vinci meets Turing   http://dx.doi.org/10.14236/ewic/EVA2020.3

Giuliano Gaia, Stefania Boiano, Jonathan P. Bowen & Ann Borda   Museum Websites of the First Wave: The rise of the virtual museumhttp://dx.doi.org/10.14236/ewic/EVA2020.4

Ann Borda & Jonathan P. Bowen   Turing's Sunflowers: Public research and the role of museums   http://dx.doi.org/10.14236/ewic/EVA2020.5

Gregor White, Lynn H.C. Love & Clare Brennan Play and the Exhibition: The problematic fun of showcasing of videogames in informal and formal contexts
http://dx.doi.org/10.14236/ewic/EVA2020.6

Matt Adams, Jocelyn Spence, Sarah Clark, Ju Row Farr, Steve Benford & Nick Tandavanitj
From Sharing To Gifting: A web app for deepening engagement
http://dx.doi.org/10.14236/ewic/EVA2020.7

Digital Heritage

Dominik Lengyel & Catherine Toulouse Artificial Imagination Induced by Visualised Hypotheses in Archaeology   http://dx.doi.org/10.14236/ewic/EVA2020.8

Moshe Caine, Doron Altaratz, Eytan Mann & Adam Havkin   The Spirit of the Cloud: The 'New Jerusalem' as a metaphor for social experiences of virtual technologies
http://dx.doi.org/10.14236/ewic/EVA2020.9

Alice Watterson, John Anderson & Kieran BaxterDesigning Digital Engagements: Approaches to creative practice and adaptable programming for archaeological visualisation
http://dx.doi.org/10.14236/ewic/EVA2020.10

Cheyanne Wheat, Robert Pickering & J. C. Diaz Virtual Fort Gibson: Footsteps through the frontier http://dx.doi.org/10.14236/ewic/EVA2020.11

Jon Malis   Accurate Representations of Digital Copyslides: The colour of Yves Klein
http://dx.doi.org/10.14236/ewic/EVA2020.12

Visualising Music

Jonathan Weinel   Visualising Rave Music in Virtual Reality: Symbolic and interactive approaches   http://dx.doi.org/10.14236/ewic/EVA2020.13

Music Beyond Boundaries

Digital Art

Shuai Xu   Black in White – Magnetic in Paper
    http://dx.doi.org/10.14236/ewic/EVA2020.32

Kira Zhigalina & Ivan Isakov   From Symbiosis to SYM: Wider applications for biofeedback
art   http://dx.doi.org/10.14236/ewic/EVA2020.33

Artistic Communities

Oliver Mag Gingrich, Aphra Shemza & Maria Almena   Transformations: New media art
between communities and professional practice http://dx.doi.org/10.14236/ewic/EVA2020.34

Oliver Mag Gingrich, Paola D'Albore, Eugenia Emets, Alan Renaud, David Negrao
    Connections: Participatory art as a factor for social cohesion
    http://dx.doi.org/10.14236/ewic/EVA2020.35

Fion Gunn, Maureen Kendal & Mehmet Mulla   An Exploration of How Artists Use Immersive
Technologies to Promote Inclusivity   http://dx.doi.org/10.14236/ewic/EVA2020.36

Visual Patterns and Mathematics

Andy Lomas   Enhancing Perception of Complex Sculptural Forms Using Interactive Real-
time Ray Tracing   http://dx.doi.org/10.14236/ewic/EVA2020.37

Ryosuke Arai & Ou Yamamoto   Visualisation Tool for Complex 3D Fractals on Volumetric
Displays   http://dx.doi.org/10.14236/ewic/EVA2020.38

Dave Everitt & Fania Raczinski Creative Visualisation of Magic Squares
    http://dx.doi.org/10.14236/ewic/EVA2020.39

Sara Choudhrey   Cheated: Digital technologies in Islamic art practice
    http://dx.doi.org/10.14236/ewic/EVA2020.40

Brian Wichmann   Tilingsearch.org: A searchable repository of Islamic geometric
patterns   http://dx.doi.org/10.14236/ewic/EVA2020.41

Ian Truelove   Bringing the Blockchain to Life: Or how I learned to stop worrying and love
the algorithm   http://dx.doi.org/10.14236/ewic/EVA2020.42

Visualising Text and Data

Taekyeom Lee & Yeohyun Ahn Tangible TYPE + CODE
    http://dx.doi.org/10.14236/ewic/EVA2020.43

Yeohyun Ahn   TYPE + CODE VII: Typographic selfie + code
    http://dx.doi.org/10.14236/ewic/EVA2020.44

Wayne Clements   Resuscitating a Dead Rabbit
    http://dx.doi.org/10.14236/ewic/EVA2020.45

Catarina Sampaio & Luísa Ribas   On Data Portraits: An analysis of creative
approaches to the visualisation of personal data http://dx.doi.org/10.14236/ewic/EVA2020.46

Christina Karababa   3D Reproductions: The replicated object, a speculative model
    http://dx.doi.org/10.14236/ewic/EVA2020.47

Jānis Garančs In Flow Between Fascination, Awe, Despair and Trance: Algorithmically
controlled live online trading experience http://dx.doi.org/10.14236/ewic/EVA2020.48

Moving Images

Nick Lambert, Mike Smith & Jazz Rasool   Designing an Augmented Reality Exhibition: Leonardo's Impossible Machine http://dx.doi.org/10.14236/ewic/EVA2020.49

Ricardo Megre & Sahra Kunz   Motion Capture Visualisation For Mixed Animation Techniques   http://dx.doi.org/10.14236/ewic/EVA2020.50

Eugenia S. Kim, Kim Vincs & John McCormick   Oncheon: Learning to perform motion trails for virtual spaces   http://dx.doi.org/10.14236/ewic/EVA2020.51

Oliver Mag Gingrich, Claudia Fasola-Moore & Eike Falk Anderson   Once Upon a Time in Animation: Curatorial strategies for an exhibition on the National Centre for Computer Animation   http://dx.doi.org/10.14236/ewic/EVA2020.52

Karen Bosy & Cristina Portugal Media Language: Video practices   http://dx.doi.org/10.14236/ewic/EVA2020.53

Amanda Egbe   Veils and Sensors: An artistic intervention with archival moving image materialhttp://dx.doi.org/10.14236/ewic/EVA2020.54

Immersive Environments

Hannes Rall   ShakesVR: Redefining narrative strategies for linear storytelling in a fully immersive environment http://dx.doi.org/10.14236/ewic/EVA2020.55

Ross Williams, Benjamin Seide & Elke Reinhuber   An Evaluation of Different Strategies to Represent Performance in a Tropical Garden for Immersive Environments   http://dx.doi.org/10.14236/ewic/EVA2020.56

Angela Ferraiolo   Fictional Characters as Adaptive Systems: The Malaspina and de Graaf Gardens http://dx.doi.org/10.14236/ewic/EVA2020.57

Artificial Imagination

Anna Notaro   State of the Art: A.I. through the (artificial) artist's eye   http://dx.doi.org/10.14236/ewic/EVA2020.58

Grayson Aleksandr MillsArt in the Digital Age: Posthumanism, A.I. and the body   http://dx.doi.org/10.14236/ewic/EVA2020.59

Carla Capeto   Dramaturgy of Robots and Machines   http://dx.doi.org/10.14236/ewic/EVA2020.60

Ron Yakir   Touch and Go: On the use of proprioception to convey a meaningful experience in virtual reality   http://dx.doi.org/10.14236/ewic/EVA2020.61

Research Workshop

Graham Diprose, Balandino Di Donato, Matthew Tate, Zuzanna Rabikowska & Ruby Rossini   Research Workshop 1: Explorations in sound and visual art   http://dx.doi.org/10.14236/ewic/EVA2020.62

Leticia Crespillo Marí   Virtual Reality Cataloguing of Light Installations and Environments: The prototypes of Dan Flavin and Ann Veronica Janssens
http://dx.doi.org/10.14236/ewic/EVA2020.63

Fang-Yu Chen, Tien Ling & Nai-Chun Chen   Living Community Visualisation: A case study of school districts in Hsinchu   http://dx.doi.org/10.14236/ewic/EVA2020.64

Huan Fan   The Spectator Fulfilling the Concept of Liveness
http://dx.doi.org/10.14236/ewic/EVA2020.65

Susana Gómez Larrañaga   8chan, a Twitter-Fossil: A post-digital genealogy of digital toxicity http://dx.doi.org/10.14236/ewic/EVA2020.66

Graham Diprose, Baqi Ba, Mohammad Montazerian, Frederic Fol Leymarie, Anastasia Sycheva & Richard Hoadley   Research Workshop 2: Technical and conceptual innovations   http://dx.doi.org/10.14236/ewic/EVA2020.67

Workshops

Nick Lambert, Carl H. Smith, et al.   EVA London 2020 Workshops
http://dx.doi.org/10.14236/ewic/EVA2020.68

Carl H. Smith   Living in Parallel: Adventures in pluralism and double consciousness
http://dx.doi.org/10.14236/ewic/EVA2020.69

Carl H. Smith & Eddie Castañeda   Techno-Hyperhumanism
http://dx.doi.org/10.14236/ewic/EVA2020.70