

# EVA London 2019



EVA London  
Electronic Visualisation and the Arts  
[www.eva-london.org](http://www.eva-london.org)



Proceedings of EVA London 2019

BCS London  
8–12 July 2019

Editors:  
Jon Weinel  
Jonathan P. Bowen  
Graham Diprose  
Nick Lambert

[www.bcs.org/ewic/eva2019](http://www.bcs.org/ewic/eva2019)

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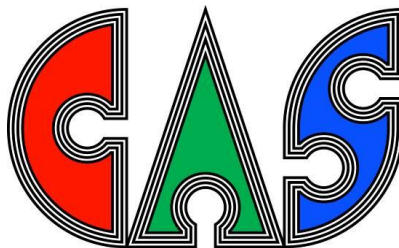
# Acknowledgements

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Thanks to all the speakers and participants for making the EVA London conference a continuing success.



The Computer Arts Society

# Preface

The *Electronic Visualisation and the Arts* London 2019 Conference (EVA London 2019) is co-sponsored by the Computer Arts Society (CAS) and BCS, the Chartered Institute for IT, of which the CAS is a Specialist Group. 2019 marks the 50<sup>th</sup> anniversary of *Event One*, an early digital art exhibition held at the Royal College of Art in 1969.

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

The EVA London 2019 Conference presents a wide spectrum of papers, presentations, demonstrations, a Research Workshop and a special half-day event for the fourth year, the EVA London Symposium on 8 July 2018, with three invited speakers.

This year, *Event Two*, an exhibition of digital art, is being held in association with the EVA London Conference at the Royal College of Art, with CAS, FLUX group, and Lumen Prize involvement, celebrating the 50<sup>th</sup> anniversary of *Event One*, held at the same venue in 1969. The conference also includes a launch of the book *Museums and Digital Culture* (partly inspired by EVA London) and a special China session with an evening event, organised by Sean Clark.

A feature of EVA London 2019, started last year, is a *Research in Education Day* on 12 July 2019, immediately after the main conference, bringing together

students and associated staff from universities in the London area to enable presentations and networking.

As in previous years, there is a Research Workshop running in parallel with other conference sessions, this year on the afternoon of the first day, to encourage postgraduate student participation. Presenters at the Research Workshop are offered bursaries for free attendance on that day. Several other bursaries are also available to encourage attendance by those with no other source of funding (especially independent artists contributing to the conference). For example, this year EVA London is again liaising with FLUX, a London-based artists group.

EVA London 2019 presents papers and abstracts from international 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 again features three keynote talks, one on each day of 9–11 July 2019.

This publication has resulted from a selective peer review process, fitting as many excellent submissions as possible into the limited timetable of the conference. This year, submission numbers were similar to the high numbers in 2017 and 2018, with an excellent standard overall, so it is pleasing to have so many good proposals from which to select the programme.

EVA London is part of a larger network of EVA international conferences. In the past, 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. In particular, EVA Paris restarted in 2018 and continues in 2019. Further venues for EVA conferences are very much encouraged by the EVA community.

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The people listed below reviewed submissions for the EVA London 2019 Conference and the Organising Committee is very grateful for their voluntary help in the selection process.

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Some additional reviews were provided by Gareth Polmeer and Genevieve Smith-Nunes.