EVA London 2019

EVA London Electronic Visualisation and the Arts 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

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Published by BCS Learning & Development Ltd., a wholly owned subsidiary of BCS, The Chartered Institute for IT, First Floor, Block D, North Star House, North Star Avenue, Swindon, SN2 1FA, UK. www.bcs.org

ISBN 978-1-78017-505-8 ISSN 1477-9358

British Cataloguing in Publication Data. A CIP catalogue record for this book is available at the British Library.

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Acknowledgements

EVA London 2019 gratefully acknowledges:

- BCS, The Chartered Institute for IT for hosting EVA London 2019 at its central London office, and BCS Computer Arts Society (CAS) Specialist Group for providing bursaries. Special thanks go to Kerry Wear at the BCS, for help with budgeting, registration, and venue and speaker arrangements, as well as Becky Youe and Florence Leroy of the BCS Electronic Workshops in Computing (eWiC) series, for support with the printed and online conference proceedings.
- The Anthill Social and Tom Keene for website hosting and support.
- * Royal College of Art, for providing the venue of Event Two.

Thank you to staff at the BCS London office for help with IT and other support.

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 50th 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 halfday 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 50th 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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