

Shaping Forms on the Web

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Abstract

The demonstration is of a distributed web-based artwork that uses movement detected by the cameras in each computer that views it to influence its development in terms of colours, timings and shapes. It is based on individual stand alone works that have been exhibited in Washington DC and Sydney, Australia. In this development, however, the community made up of the work's distributed audience collectively influence the progress and development of the work.

Keywords

Interaction, influence, colour, www, camera.

Introduction

In *Shaping Form*, images are generated using rules that determine the colours, the patterns and the timing. These are *generative* works that are changed by the influence of the environment around them. Movement in front of each work is detected and leads to continual changes in the program that generates the images. People can readily detect the immediate responses of the work to movement but the changes over time are only apparent when there is more prolonged, although not necessarily continuous, contact with it. A first viewing followed by one several months later will reveal noticeable developments in the colours and patterns. The *Shaping Form* series are the latest works arising from Ernest Edmond's preoccupation with interaction and time expressed in a wide range of abstract generative forms over many years.

Digital artworks like '*Shaping Form*' are designed to interact with the environment in which they are found. Exactly how they behave depends on what kind of compositional elements or principles are being worked with at the time. Ernest Edmonds works with structural relationships between visual elements that determine how his images are constructed. Some works are made to learn from external movement such as a hand waving or a person walking by. Others react to sound such as music or voice or wind. The way the works 'learn' determines how they move and the choice of colour and pattern in the images displayed. The behaviour of the works is not intended to always be obvious, so that if you continuously try to force a response by waving or shouting, that might result in a period of quiet. *Shaping Form* has a creative element, a computer program, which generates a continuous stream of images using predefined rules that control the rectangular pattern, the pallet of colours and the timing. The program continuously analyzes movements detected in front of the work. As a result of this analysis, the rules are steadily modified in a way that accumulates a history of experiences over the life of the work. The shaping of the form is a never-ending process of development.

These works have previously been made and exhibited as individual wall hanging pieces. A new version has been developed that works across the WWW and in which the shared experiences at all of the client locations that access it combine to form a distributed network that, in total, influences the shaping form development.

Implementation

Figure 1 shows the web version of *Shaping Form*. The image is square and consists of a set of coloured vertical stripes. The pallet from which the colours are selected, the width pattern of the stripes and the pace at which changes occur all vary according to two factors. Firstly, the work itself is generative and so changes in time without any consideration of input from the cameras. Secondly, the generative process and the parameters mentioned above are all

subject to change as a result of the interactions that occur at each client and, most significantly, the collective history of those interactions.

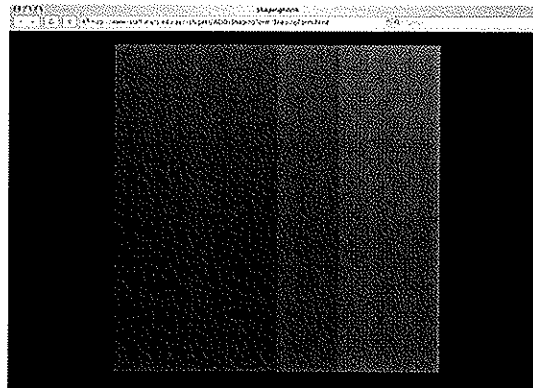


figure 1. The Web Version of Shaping Form

Shaping Form on the Web takes the server-client form as shown in figure 2. The client web application is a Flash application that computes activity levels according to camera inputs and posts the activity levels to Java servlets. The servlets are composed of the same components in the stand alone version. Each client receives HTTP responses from the servlets. The response is 16 stripe lists.

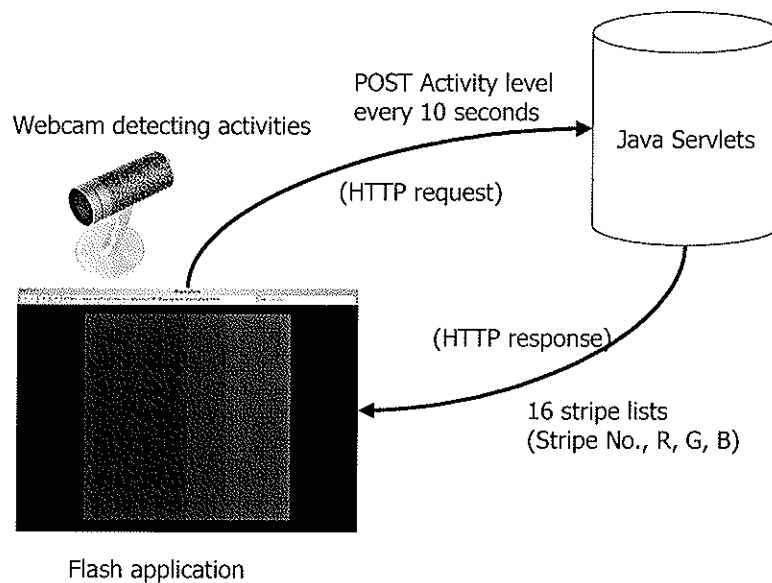


figure 2. System Architecture

Acknowledgements

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THIS IS

LIVE

RPOOL

(re)Actor3

the third international conference
on digital live art

Proceedings

Nick Bryan-Kinns
Tom Lloyd
Jennifer G. Sheridan
(Editors)

Holiday Inn and
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Preface

A very warm welcome to the proceedings of (re)Actor3: the Third International Conference on Digital Live Art.

The (re)Actor International Conference series explores cutting edge research and practice at the intersection of Human-Computer Interaction, Computing, and Live Art. As with previous years, this conference consists of academic papers reflecting on practice and research, live performances, installation art, and demonstrations of novel pieces of technology.

The theme of this year's conference, "This is LIVERpool", focuses on the nature of liveness in Digital Live Art - exploring how computing can be used to create new forms of live art in the physical world, and what issues this raises in terms of understanding the relationships between performance and interaction. The papers you will find in these proceedings have all risen to this challenge, exploring genetics through live art, creating movement poetry, distributing interactive installations across the globe, and fostering live interaction with cellular automata, to name just a few.

(re)Actor3 is located in Liverpool, UK - host of Europe's 2008 Capital City of Culture. This year we are co-located with the BCS Interaction Conference on Human-Computer Interaction, with a heady mix of evening performances and installations taking place at the Contemporary Urban Centre North West - an Arts, Cultural and Social enterprise centre which aims to reflect the themes of contemporary life in the urban environment. We are indebted to BigDog Interactive Ltd., and Routledge publishers for their generous support this year, and to the BCS Interaction group, especially David England, for their support and assistance. We also thank the Centre for Digital Music at Queen Mary, University of London, for supporting the Artist in Residence commission which promises an exciting and innovative performance mixing contemporary pianism and performance with cutting edge digital signal processing as a key part of the evening event. We also thank Martyn Ware, Lewis Sykes, and the Future of Sound for choreographing the frankly spectacularly jam-packed evening extravaganza.

Each year the (re)Actor conference attracts a diverse range of participants from the arts, humanities, and sciences. This third year is no exception with practitioners, artists, researchers, academics, and scientists gathering together for a truly interdisciplinary meeting of minds. Building on the conference's international reputation, this year's submissions were from 12 countries across the globe ranging from Scandinavia, to the US, Europe, and Australia. Each contribution to the conference was peer reviewed by the (re)Actor3 committee, and every year the decisions on which papers to accept gets harder and harder as the competition for acceptance grows. We thank the committee for all their hard work in reviewing the contributions and know that the selected contributions will invigorate, challenge, and stimulate you.

Most importantly, we thank you, the participants, for your contributions to the conference and to the field of Digital Live Art itself. Without you we would not be able to push this exciting and innovative field onward and upward. Keep the ideas coming - we are sure that these proceedings will spark future work and new collaborations.

Finally, none of this would be possible without the tireless energy and vision of Jennifer Sheridan who founded and directs the conference series. Thank you Jennifer!

All the best, and remember, keep it Live!

Conference co-chairs:
Nick Bryan-Kinns, Queen Mary, University of London
Tom Lloyd, Dreamtime film

(re)Actor director: Jennifer G. Sheridan, BigDog Interactive
3 September 2008

Conference Committee

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centre for digital music



Keynotes

Martyn Ware

(re)Actor3 will open with a keynote address from Martyn Ware. Martyn, the founder member of both The Human League and Heaven 17, is one of the leading figures in electronic music. As record producer and artist has featured on recordings totaling over 50 million sales worldwide during a 27 year career to date, working with Tina Turner, Terence Trent D'Arby, Chaka Khan, Erasure, Marc Almond and Mavis Staples.

Martyn founded Illustrious Co. Ltd. with Vince Clarke in 2001 to exploit the creative and commercial possibilities of their unique 'Heightened Reality' three-dimensional sound technology and bespoke musical composition in collaboration with fine artists, the performing arts and corporate clients around the world who include The Science Museum, London, The Royal Ballet, and collaborations with the artists Cathy De Monchaux, Tim Head, Gary Stevens, David Bickerstaff and Philip Tsiaras (at the 2003 Venice Biennale).

Recently Martyn was part of the collective representing Britain at the Venice Architectural Biennale in 2006. Echo City, developed under the leadership of Jeremy Till, Director of Architecture at the University of Sheffield, is an "urban register" describing Sheffield at a variety of scales from 1:1 to 1:10 million and Martyn's soundscape projected Sheffield's relationship with the world at large. He also lectures extensively on music production, technology, creativity and soundscape composition at universities and colleges across the UK and Europe.

Tom Lloyd

Director, DreamTime Film. After a degree in film, Tom worked in Soho as assistant film editor on 35mm commercials. He shot a promo for the band The Orb, then left the city for a life on the road with horses, returning to film through an MSc in Creative Technology at Leeds Metropolitan University, and with a stint as camera assistant at Cosgrove Hall Films, Manchester. Tom has spent the last seven years working as a video artist and film maker with arts company Welfare State International, and for The Sage Gateshead, Whitewood and Fleming, The Ruskin Foundation, Lancaster University and others on film projects and large scale, sensor-based video installations. As Creative Associate for Lanternhouse International, Tom directed Supercasino, a 10 minute short for North West Vision and the UK Film Council, which was selected for Cannes Film Festival Short Corner earlier this year. Also this year, Slave Label which he directed for Whitewood and Fleming was screened at The Royal festival Hall as part of the Freedom and Culture weekend. In 2007 Tom established Dreamtime Film Ltd to enable him to pursue his own projects. When he is not working, Tom can be found mixing visuals at club nights and festivals, or at home in the Lake District with his wife Tasha, daughter Florence and his herd of fell ponies.

Special Performances

Sarah Nicolls

Recipient of the (re)Actor3 Artist in Residence Grant, sponsored by the Centre for Digital Music. Sarah is a pianist specialising in contemporary music. She has performed concerti with the London Sinfonietta, the Philharmonia Orchestra and the BBC National Orchestra of Wales, appeared in solo recital over a dozen times on Radio 3, winner of the British Contemporary Piano Competition 2000, shortlisted twice for the Royal Philharmonic Society Young Artist Award and received consistent critical acclaim since her South Bank debut in 2001. Sarah also plays with Mira Calix (Warp Records) and David Sheppard (Sound Intermedia) in Alexander's Annexe - a trio exploring the expansion of the grand piano with electronics and pre-recorded sound. Their album Push Door To Exit is available on Warp Records, the first release having sold out in 3 days.

Future of Sound

Future of Sound is a not-for-profit organisation that provides a forum for the discussion of new and convergent art forms. By creating immersive experiences using state of the art sound technology Future of Sound showcases leading practitioners in the fields of music and audio design, collaborating with artists and scientists.

Future of Sound was originally conceived by Illustrious Company, established by Martyn Ware (founder member of both The Human League and Heaven 17) and Vince Clarke (member of Erasure, Yazoo and Depeche Mode) two of the leading figures in electronic music. Clarke and Ware feel that experimental sound can be more widely used for interdisciplinary artistic activity, inspiring new ideas and ways of working.

Future of Sound's aim is to introduce artists working with interdisciplinary art forms to each other, and to create a wider audience for and awareness of new convergent art forms. Future of Sound will co-organise and manage the evening event, drawing on their extensive past experience of organising such events, and their network of scientists and artists who create DLA.

(re)Actor Hostesses

Your (re)Actor Hostesses are Detroit, Tiff, Cathy and Deb.

Authoritative and informed, approachable and helpful, glamorous and gracious - they are there to help. Perhaps. As true and real to themselves as they can be, yet there is something of everyone in them. Look closely - like a living, breathing mirror they might just reflect back some part of you that you hadn't seen before. With years of experience doing what they do, they have appeared in previous incarnations as maids, air hostesses, catwalk models and even furry animals. But don't worry, this time they won't bite.

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