

## Computational Aesthetics '08: Arts Programme

### Art Programme Chairs Introduction

Welcome to the Computational Aesthetics 2008 (CAe 2008) arts programme, a major component of this international symposium on Computational Aesthetics in Graphics, Visualization, and Imaging.

Computational Aesthetics emphasises how different disciplines can productively inform each other. It bridges the analytic and synthetic, integrating aspects of computer science, philosophy, psychology, and the fine & performing arts. It's focus is on how computers can be used to drive aesthetic processes and how aesthetic processes can help formulate the design and analysis of computer software.

Computational Aesthetics seeks to facilitate both the analysis and the augmentation of creative behaviour. It investigates the creation of tools that can enhance the expressive power of the arts and furthers our understanding of aesthetic evaluation, perception and meaning. This section of the proceedings documents the artistic contributions based around this theme and documents the creative works and performances for the workshop.

There are three main sections: a local curated exhibition and performance programme, *momentum: virtualising as you create and socialise*, curated by Adérito Fernandes Marcos from the University of Minho, Portugal. The Computational Aesthetics Art Exhibition also takes place in cyberspace, on an island in the on-line virtual world, *Second Life*. We thank Bonnie Mitchell and Anthony Fontana, from Bowling Green State University, USA for facilitating this component of the exhibition.

CAe08 Art Programme Chairs:

Paul Brown, *University of Sussex*, [paul@paul-brown.com](mailto:paul@paul-brown.com)

Jon McCormack, *Monash University*, [Jon.McCormack@infotech.monash.edu.au](mailto:Jon.McCormack@infotech.monash.edu.au)

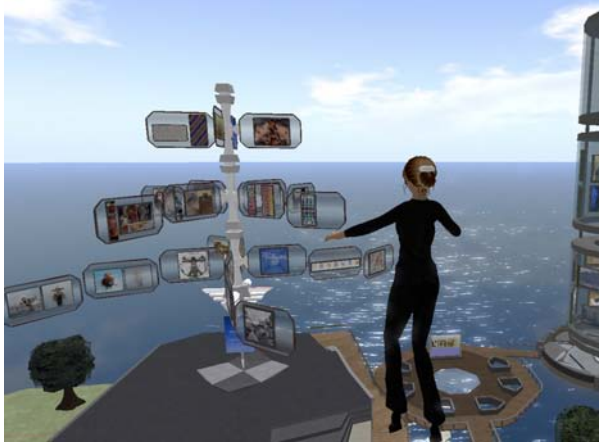
The final section of this catalogue documents the accepted works submitted to the art track of the workshop. Thirty-one submissions were received from our 'call for artworks' for CAe08. Each submission was reviewed by up to ten different reviewers, with expertise spanning across the traditional art and science divide. Fifteen works were accepted for exhibition and are documented in this catalogue, an acceptance rate of 48%. The artworks selected for exhibition include interactive software algorithms, still images and prints, digital videos and animations. All of the selected artworks in some way explore the theme of computational aesthetics, that is, the aesthetic nature of computational process.

We would like to extend our sincere thanks to a number of individuals who have assisted in realising the CAe08 arts programme. Our thanks to all the members of the international program committee who assisted with the large number of reviews and very tight deadline required during the review of submitted artworks. Thank you to Adérito Marcos for the local arrangements and for curating the local art and performance programme; to Bonnie Mitchell for organising and hosting the virtual art exhibition in *Second Life*. We would also like to express our appreciation to Stefanie Behnke for her tireless assistance with the on-line reviewing system. Special thanks to the other editors and organisers of CAe08 for their assistance in bringing all the aspects of the conference together: Douglas Cunningham, Victoria Interante, Tobias Isenberg, Bruce Gooch and Joaquim Jorge.

On behalf of the organising committee for CAe08 we hope you find enjoyment, surprise and inspiration from this year's arts programme.

## Second Life CAe08 Exhibition

Bonnie Mitchell and Anthony Fontana, *Bowling Green State University*  
[s2006art@gmail.com](mailto:s2006art@gmail.com)



*Second Life* virtual exhibition

Selected 2008 Computational Aesthetics artworks are available for viewing in the *Second Life* virtual world. *Second Life* is a 'multi-user virtual environment' (MUVE) in which users of an online 3D space can interact through avatars using voice and text chat. Also called 'Residents', users can explore, meet other Residents, socialise, participate in individual and group activities, as well as create and trade virtual items and services. *Second Life* offers individuals an online environment to meet face to face, dramatically changing the dynamic of online meetings, exhibitions of artworks, research and education. Since *Second Life* is used by people from around the world, there is an opportunity to engage in cross-cultural networking and research within a global community. The *Second Life* virtual world is a dynamic 3D space and immersive learning environment that can be created and experienced by anyone.

*Second Life* also features a full-fledge programming language that enables Residents the ability to create scripts to control geometric objects and particle systems. Although the works in the Computational Aesthetics art exhibition do not take advantage of this embedded computing language, the creative computations by these talented artists, help inform the future of art in a number of digital domains. Some

of the work in the Computational Aesthetics exhibition is time-based, interactive, or computed real-time. *Second Life* is currently not easily able to showcase this type of work in its original format so a still image is exhibited instead.

The Computational Aesthetics virtual art exhibition is hosted on the Bowling Green State Virtual Campus in the Aloft Gallery. Because avatars can fly and adverse environmental conditions do not affect the virtual world, the Aloft Gallery does not have a roof or stairs. Avatars fly up to and around the artworks and experience the work in ways not possible in the real world. The gallery exists on a virtual island and is surrounded by ocean thus adding to the ambience.

We welcome you to create an avatar if you do not have one already. Both the free application and *Second Life* account are available at <http://www.secondlife.com>

To visit the Computational Aesthetics Virtual Art Exhibition: <http://slurl.com/secondlife/Bowling%20Green%20State/28/73/51>

BGSU *Second Life* Virtual Campus Coordinators:  
 Bonnie Mitchell and Anthony Fontana  
 Bowling Green State University, USA

## CURATED LOCAL EXHIBITION: MOMENTUM

## Curated local art exhibition: momentum

Adérito Fernandes Marcos, *University of Minho*  
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### momentum: virtualising as you create and socialise

Arts and culture are social phenomena, consequential of the social interaction, of the individual and collective imaginary manifestations, that together establish a common communicational and informational space embracing artefacts said to be cultural and artistic. These artefacts are expressions of our imaginary. They might be described as symbolic objects that aim at stimulating emotions. They reach us through our senses (visual, auditory, tactile, or other). They are displayed by means of physical material (stone, paper, wood, etc.) and combine some patterns to produce an aesthetic composition. Like any art object, *digital art* objects are informational in nature; they are symbolic and purposeful built. Their creator intends to convey some message, normally to suggest some state of mind or to induce an emotion and the consequent feeling.

Digital art is therefore defined as art that explores the computer medium (tools, technologies and digitally coded information content) as a tool and material for creation.

In the artwork *momentum* entitled 'virtualising as you create and socialise' to be presented at CAe 2008, two artefacts created by local artists aim at reach the public through visual and auditory senses by exploring the individual and collective interaction. We want to go, by some way, back to the first artistic experiences from the first half of the nineteenth century, when pioneers such were Marcel Duchamp and László Moholy-Nagy explored the integration of *interaction* and *virtuality* (in the sense of the immaterial) in art. Throughout these two artefacts, a kind of fast snapshot of some creative work going on in local art projects, we envisage the imple-

mentation of the shift from object to *concept* in the form of the 'virtual object' that was seen as a structure in the process, sometimes dynamic and volatile, able to create expressive effects on the part of the observer, who is an active player when *interacting* with the artwork itself.

L. Valbom and H. Silva in their artefact/performance entitled 'Rhythm Essay' explore sonorous languages combined with after-surrealist vision of audiovisual mixtures. There is a process of virtualization of the auditory and visual information elements, suggesting a plastic vision of rhythm, timbre, sound and image, using digital processes without aesthetic concessions nor traditional music /sound styles.

J. Martinho Moura and J. Sousa in their artefact/performance entitled 'YMYI – You Move You Interact' explore the concept of body language dialogue where the performer/user is invited to develop his/her own creative inspiration based on his own body gestures and movements.

This artwork *momentum* was possible by the dedicated effort of the artists to whom I first address my sincere appreciation for their support and involvement. Second, I send a special thank to the sponsors Vimúsica Lda and Computer Graphics Center for their precious help in providing some pivotal equipment. Finally, a special mention to the students, professors and executive board of the Master Course in Technology and Arts of the School of Engineering of the University of Minho, who have offered their precious help in the installation. To them I give my sincere appreciation.

Lisbon, 18 June 2008

Adérito Fernandes Marcos, *University of Minho*  
Curator, *momentum*

## Rhythm Essay

Leonel Valbom and Henrique Silva, *International Biennial of Art in Vila Nova de Cerveira, Portugal*



Performance

### Description

*Rhythm Essay* is the combination of five sound variations where different rhythms are combined with digital visual mixtures. The total duration of the performance is 60 minutes without interruptions, integrating five conceptual variations:

1. Absence of Rhythm;
2. Rhythm of the Machines;
3. Rhythm of the Movement and Words;
4. Diversity of the Rhythm and Colors;
5. Conclusion.

This work suggests a plastic vision of rhythm, timbre, sound and image, full of energy and movement, using digital processes without aesthetic concessions and without traditional music /sound styles.

This interpretation uses a set of sonorous languages changing in timbre and time, blending mutant timbres and melodic/rhythmic changes, showing an after-surrealist vision of audiovisual mixtures. The 'Rhythm Essay' opposes re-synthesized industrial noises with frenetic rhythms of digital musical instruments, without repetitions or possible memorizations, combining them with visual metaphors of shapes and colors extracted from reality, but modified with patterns sometimes symmetrical and regular.

### Artist's Biography

**Leonel Valbom** holds a Ph.D in Information Systems from the University of Minho with the thesis: 'Integration of Virtual Reality in the Development of a Model of Immersive

Musical Instrument'. He is author and co-author of several publications in the fields of digital art, virtual reality and immersive music. He is co-founder and organizer of Artech series of international conferences in Digital Arts. He served as member of programme committees of several conferences and art fairs (e.g. Artech, Biennial of Cerveira, Minho Campus-Party). His current interests are in creation in digital art and research in the field of immersive musical instruments. He is currently lecturing at University of Minho and Gallaecia High School.

**Henrique Silva** has attended further schooling at the École des Beaux-Arts – Paris VIII in Plastic Arts. A bursary holder of the Gulbenkian Foundation from 1962 to 1965. He worked with Arpad Szenes and Vieira da Silva. From '75 to '77 he worked with the Video diffusion collectives «MON OEIL» – Paris. From '77 to '79 he ran the Academy of Plastic Arts – Oporto. He is a founding member of the following institutions: Cinematographer Co-operative of Cinema – Oporto; ANAP – National Association of Plastic Artists; the José Moreira da Silva Academy – Oporto; Pedra a Pedra – Centre of Studies and Work on Stone – Oporto; Association «PROJECTO» – Nucleus of Cultural Development – «Gondar», Vila Nova de Cerveira; Superior Institute of Social Economics – Oporto. He participated in the Group VIDEO PORTO. He is represented in various private collections in Europe, the United States, Canada and Japan. He presently dedicates himself to furniture designing in stone and metal. Director of the Course «Arts in Granite», of the E.P.E.S. He directed the free workshop of the I and VII International Biennial of Art in Vila Nova de Cerveira, 1978 and 1992. Since 1992 is the Director of this International Biennial of Art.

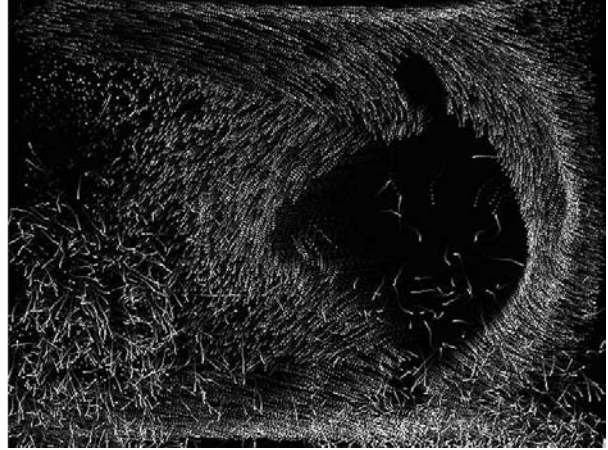


## You Move You Interact

João Martinho Moura and Jorge Sousa, *University of Minho, Portugal*



Interactive Installation



### Description

*YMYI* (You Move You Interact) is an interactive installation, where one is supposed to build up a body language dialogue with an artificial system so as to effectively achieve a synchronized performance between the real user's body and the virtual object itself. The project aims at exploring a spatial sphere, where the user/performer is invited to develop his own creative inspiration based on his own body gestures and movements.

During the whole time assigned to research related to both the development and the scientific foundation stone of the prototype itself, we realised, in so far as the expectations brought on the user of the *YMYI* platform were concerned, that we were dealing with two key conceptions — narrative and image. Underlying these concepts, inbetween the dual dimension of the human body and its perception of itself and the surrounding environment, we truly believe that the definitions given on this subject by the scientist António Damásio constituted a resourceful enlightenment to the scope of our investigation [1]. For more information visit: [www.ymyi.org](http://www.ymyi.org)

[1] Damásio, António R. (2000). *The Feeling of What Happens. Body and Emotion in the Making of Consciousness*. A Harvest Book, Harcourt Inc.

### Artist's Biography

**João Martinho Moura** is a developer in the area of multimedia and information systems. He worked in several projects in fields of education, media and telecommunications, entertainment and health industries. His interest are focused in intelligent interfaces and digital art. He holds a graduation diploma in informatics from the University of Minho. He is currently a master student in the Master Course in Technology and Digital Arts of the University of Minho.

**Jorge Sousa** holds a graduation diploma in Languages and Modern Literature from the University of Coimbra. He is a language teacher in the secondary school. His interests are focused on digital arts. He is currently a student in the Master Course in Technology and Digital Arts of the University of Minho.

# COMPUTATIONAL AESTHETICS '08: EXHIBITION

## Inadvertent

Murat Germen, *Sabanci University*  
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6 photograph prints, mounted on forex, sizes ranging from 200cm x 51cm – 200cm x 80cm

### Description

These computer works are images that were accidentally created on the MacOS X environment using the panoramic stitching software named AutoPano Pro v1.3 and v1.4. Some of them were originally intended as clean-cut panoramas with no errors, yet the software gave unexpected erratic results that I happened deciding to keep and further experiment on. First I analyzed how this particular accident could have taken place, then I started to guide my photography in such a way that such accidents might possibly occur again. In other words, the first results were surely unintended but the in the works to follow, I forced the computer to make errors in order to obtain unforeseeably intended accidental computer art. The result was worthwhile enough that I decided to start a series called “Inadvertent” that I will expand on in the future and exhibit as a single show.

### Artist Statement

Even though art is the product of an intentional act of fabrication, the serendipitous spill of an ink or paint, the unforeseen slip of a pen or brush in the analog realm have the potential of generating an unconscious lead in the planned course of action. The consequential shift in direction may completely change the aesthetics and content of an artwork. An artist should always be open to such “accidental” dimension which will help the artist to take the original idea out

of its initial framework and recontextualize it for a new conception. On the other hand, the outcomes of software “failures” in digital technology made a similar type of aesthetics emerge: Glitch aesthetics. The “dirty” and “chaotic” nature of glitches made things look more organic / human, as opposed to mechanically computerized. Mystifying benefits like discovering unusual / unique aesthetics will always make *ars accidentalis* an indispensable part of art practice.

### Artist's Biography

Germen has an MArch degree from Massachusetts Institute of Technology, where he went as a Fulbright scholar and received AIA Henry Adams Gold Medal for academic excellence. He works as a professor of photography and multimedia design at Sabanci University in Istanbul. He has submitted professional work for distinguished organizations such as; Istanbul Modern, Young&Rubicam, McCann Erickson, The Designory, Norman Foster&Partners, Medina&Turgul DDB, Aga Khan Architectural Awards, Siemens, etc. Having many articles / photo series published on architecture, photography, art and digital design at various magazines and books; he presented his work at several seminars, symposia and conferences like SIGGRAPH, Mutamorphosis, CAC2, EVA-London '08, eCAADe, ASCAAD to lecture on pertinent topics. Has opened over thirty inter/national exhibitions. Has received inter/national awards for work on photography, design and architecture.



## LIQST\_liquid state

Anabela Costa, *Independent Artist*  
[anabelacosta@msn.com](mailto:anabelacosta@msn.com)



Short film animation, DVD, dur. 11' 41"

### Description

Between the artist's studio and the scientist's lab we face two worlds that come together for the same liquid state. These worlds – painting and chemistry – are they that apart? The colour, the movement, the textures from those worlds will fill the screen in a poetic and aesthetic dialogue.

### Artist Statement

Research and crossing information between science and art – the purpose is always artistic, to investigate the potential aesthetic of liquids, and recreate new formulations aesthetic, using all the tools, expressions, and methods that are starting to set in, or who will take body, with the research process. Film of freedom and pure pleasure, continuing the process of joining the universe as I try to question: what does the process abstract? Without any respect for the representation:

2D, 3D, I mix everything in terms of the screen. The state of matter becomes a city coated with suns, moons, day and night, lakes, and paint to a fluid dialogue in lakes or on the walls. In the city, the camera goes back to video games from the 90s: also a cliché today. But sometimes, instead of a camera movement, I move the 'plateau'. It is primarily a sort of poetic movement and an aesthetic dialogue that interest me for this movie of happy naivety.

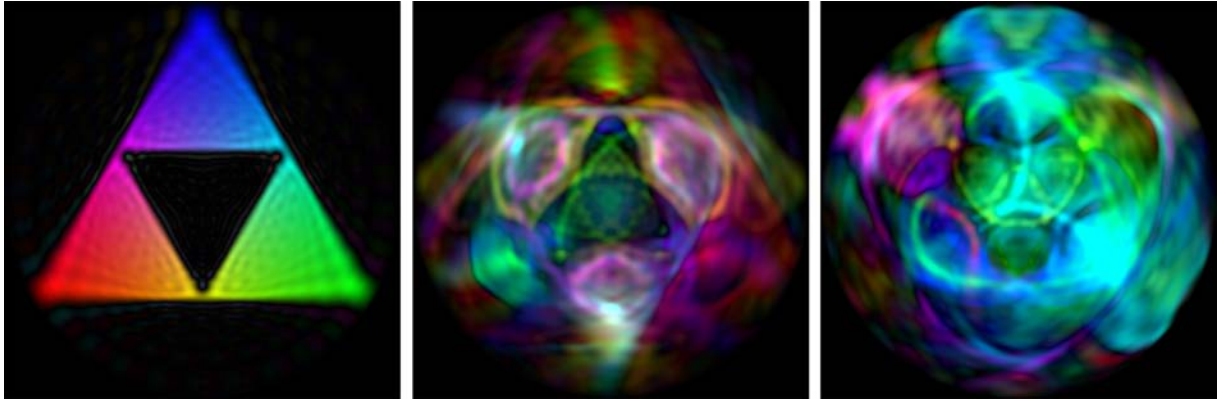
### Artist's Biography

Anabela Costa is a visual artist, independent filmmaker working with the moving image in experimental animation, developing projects that problematise concepts and relations between art and science. Her work has been selected for several international festivals for film, video and new media screenings.

[www.anabelacosta.com](http://www.anabelacosta.com)

## Triangular Vibrations / Dissonant Particles

Gordon Monro, *Art & Design, Monash University*  
[gordon@gommog.com](mailto:gordon@gommog.com)



Triangular Vibrations: Computer generated animation, DVD, dur. 7' 4"

### Triangular Vibrations

*Triangular Vibrations* is an abstract animation based on the vibrations of an idealised drum. The vibrations are analysed into modes, and shown on the screen greatly slowed down. The modes are heard (as sine waves) at normal pitches, but each audible mode is modulated (faded in and out) in accordance with its visual counterpart. There are in fact three superimposed drums at different pitches, coloured respectively red, green and blue in the visual representation. Nine hundred modes are used for each drum.

### Dissonant Particles

Psychoacoustic experiments have indicated that when two pure sine tones are played simultaneously, they will sound most dissonant when they are around a semitone apart in pitch. In *Dissonant Particles*, each particle emits a sine tone. The dissonance between particles acts as a repulsive force which pushes them apart, both in position and in pitch. There is also a long-range ("cosmological") attractive force that prevents the particles from flying off to infinity.

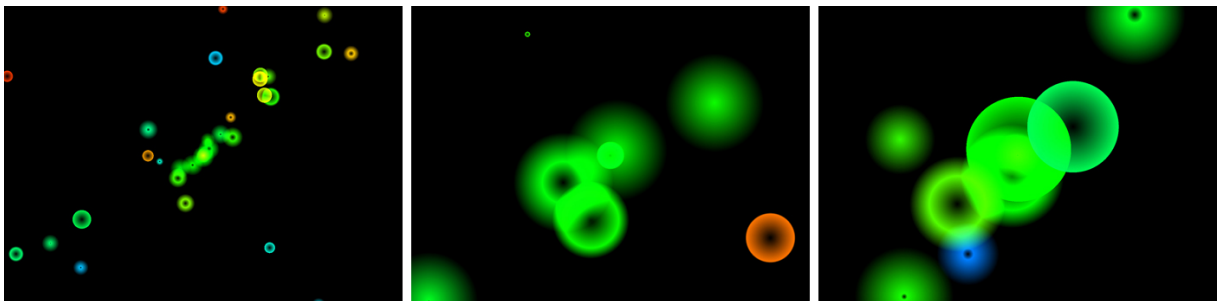
The particles pulsate and slowly evaporate; both of these processes affect the way they "feel" the forces acting on them. The colour of a particle indicates pitch: red for low pitches, green for intermediate, and blue for high. The camera tracks one particle, which is always shown in the centre of the screen.

### Artist's Biography

Gordon Monro is an electronic artist and composer based in Ballarat, Victoria, Australia. He has composed works for acoustic instruments and tape, pieces with interactive electronics, pure tape pieces, abstract videos and multimedia works. He has a strong interest in writing computer programs that generate part or all of an artwork.

Gordon's works have been performed or shown in Australia, New Zealand, Europe, Asia and North America, and broadcast nationally in Australia. He is currently undertaking a PhD in the Faculty of Art and Design at Monash University in Melbourne, working in generative art.

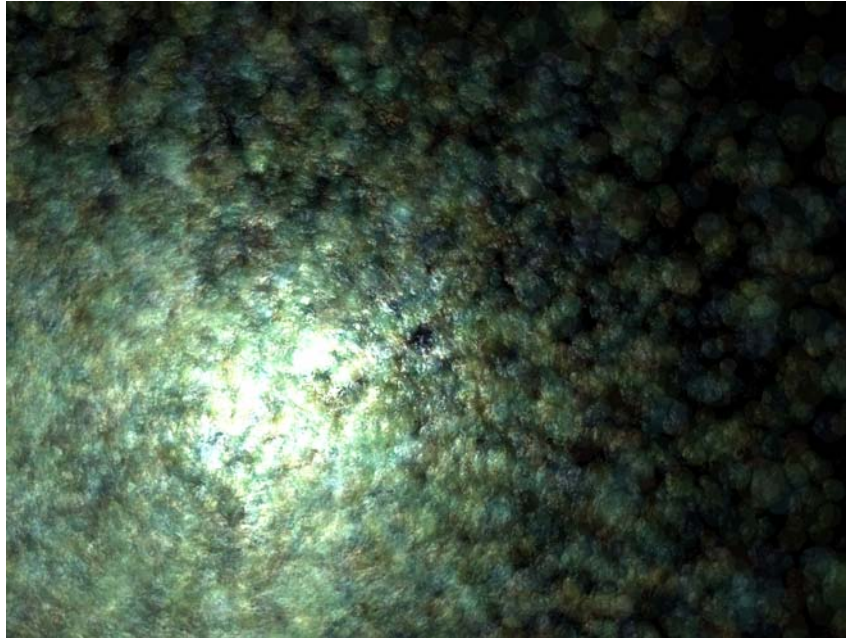
[www.gommog.com](http://www.gommog.com)



Dissonant Particles: Computer generated audio-visual animation, dur 7' 3"

## Gaia Fading

Jana Zufic, *Ars.Polis*  
[jana@ars.polis.hr](mailto:jana@ars.polis.hr)



C-type prints, face-mounted to acrylic glass, suspended, 92 x 69 cm

### Description

As soon as our ancestors began to walk the Earth, the belief in some universal life-principle arose. Be it the natural world surrounding us or the primordial energy dwelling within our psyche, Gaia is slowly fading into the darkness. Should her vibrant spirit extinguish itself, what will become of us?

There are currently three prototypes of Gaia, created in a classical 3D modelling and animation environment (LightWave). For exhibition purposes, nine images were selected and rendered in high-resolution. There was no post-processing.

As opposed to images, the “real” Gaias behind the surface of the screen (be it a photographic print or an electronic display) are neither flat nor rectangular. Instead, they exist in algorithmic space as bioluminescent constellations of floating entities, fluctuating particles and meticulously arranged light sources.

### Artist Statement

The founders of abstractionism rejected the rhetorical transparency of the canvas surface, making it opaque, impenetrable. Since then, abstract artists have emphasized flatness over depth, formalism rather than illusionism. In my work I try to break up with the sterile tradition of photorealism, usually associated with computer animation and computer

art. If I returned to the classical concept of perspective, often referred to as Albertian or Renaissance window, it was only in order to make Gaia appear more real in its unreality. Nevertheless, this illusionism is only apparent, as my artworks depict landscapes that only the inner eye can see. Alberti’s window onto the world becomes a window into one’s soul.

### Artist’s Biography

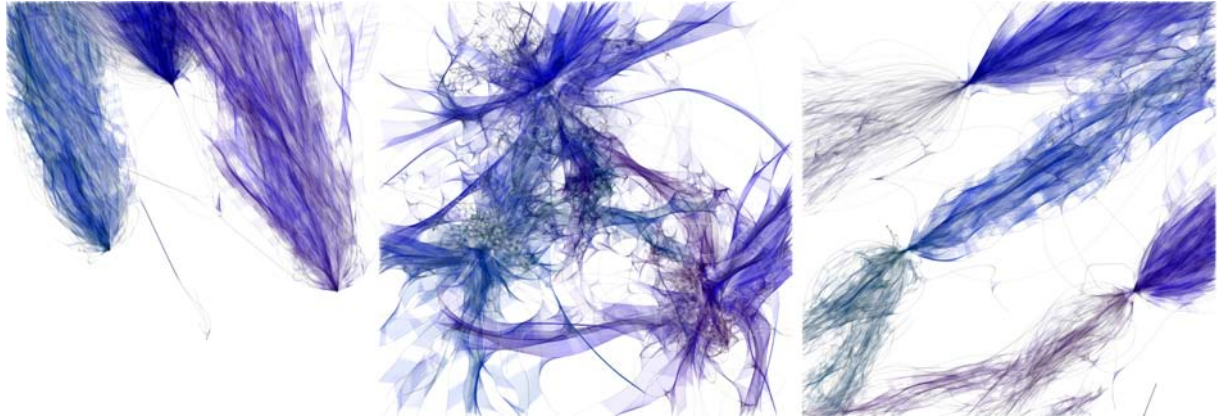
Born on December 27, 1978 in Ljubljana, Slovenia, Jana is an emerging filmmaker and self-taught visual artist. She lives in Croatia - between Porec, a small town on the Adriatic coast, and the capital Zagreb, home of the internationally renowned Zagreb School of Animation. As a scriptwriter, co-director and lead animator, she is currently working on her most ambitious project, financed by the Ministry of Culture. Dama incorporates 3D/2D animation and pixilation, an intriguing variation of the stop frame technique, employed to make dancers move in a highly stylized fashion.

Her main field of interest lies at the intersection of new media, cinema and contemporary art. Although equipped with a strong theoretical background, it is the artistic practice that defines her very existence. Various animation pieces, computer artworks and floating sculptures bear her signature. Nevertheless, she feels she is “just at the beginning of a long journey” ...



## You Pretty Little Flocker

Alice Eldridge, *Monash University*  
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Generative animation

### Description

Designing mappings to render the conceptual basis of code visible is central to much generative art; similarly there is a growing number of practitioners who transform data generated by other means to create visual or sonic forms. For the scientist, the aim of visualisation is to reveal patterns or trends in data. For the generative artist, the mapping from numbers to media is an important step in presenting their idea to their audience: to relate their 'system story'.

But is there necessarily only one such story contained in any particular data set or generative process? Just as calculus and statistics can be used to transform data and make hidden trends apparent, visualisation schemes can be used to transform systems, revealing hidden narratives. In *You Pretty Little Flocker* the ubiquitous flocking algorithm is used to tell a different story.

The generative model in this work is a basic flocking algorithm, modified to include size preference. This can be varied such that every individual flocks together, or only those

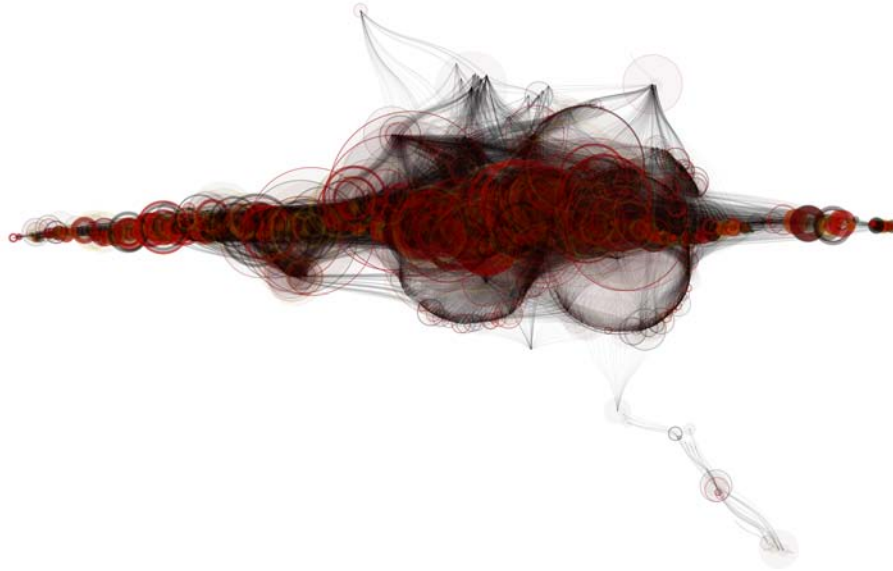
of identical sizes interact. Rather than visualising the individual boids, the interactions *between* them are rendered. The result is quite distinct from typical visualisations of flocking algorithms, but retains a sense of biological law within a digital simulation, evoking unseen but strangely familiar forms.

### Artist's Biography

Since 2002 Alice has been involved in generative art as musician, installation artist, lecturer, researcher and festival/events organiser. During this time she attained an MSc in Evolutionary and Adaptive Systems and a PhD in Artificial Intelligence from the University of Sussex, and has performed and exhibited her work internationally. She is currently working on ecosystemic generative arts projects with Jon McCormack and Alan Dorin at the Centre for Electronic Media Art (CEMA) in Melbourne, where she continues to explore her interest in adaptive systems for audiovisual interactive performance and installation.

## Field of Flowers

Pedro Amado, *University of Aveiro*  
[pedamado@gmail.com](mailto:pedamado@gmail.com)



Lambda print, 700 x 500 mm

### Description

*Field of Flowers* consists of a two part creative process – a software application and a final printed artwork.

First and foremost it consists of a software drawing machine (built with *Processing*) with the final purpose of emulating an organic field of living organisms. Based on generative principles, it recreates visually the concept of ‘flowers’ with recourse solely to graphical primitives. Each one is unique. Then it connects each one through a ‘flower root’ field trying to mimic a kind of ‘distance-through- strength’ organic network system. Throughout the process, only parameter access is provided, enabling the user to modify some of the flowers/field properties. Finally, the user is able to correct, save, and export his recreation of a ‘Field of flowers’ into the computer’s hard drive as a high-res PDF file. The final printed artwork consists of this author’s own envisioned ‘Fields of flowers’ for which he developed this software application.

### Artist Statement

Field of Flowers started as a sketch for a Processing Workshop. It evolved naturally into an usable application for final artworks as the result of an ongoing purpose to educate

people to think ‘out-of-the-box’: In this case to try and encourage students and artists alike not to be constrained by available tools, but to pursue the object of their vision despite the currently available tools.

This is part of this author’s ongoing purpose to bridge the gap between existing digital tools and the creative process in order to achieve a natural reciprocal process.

### Artist’s Biography

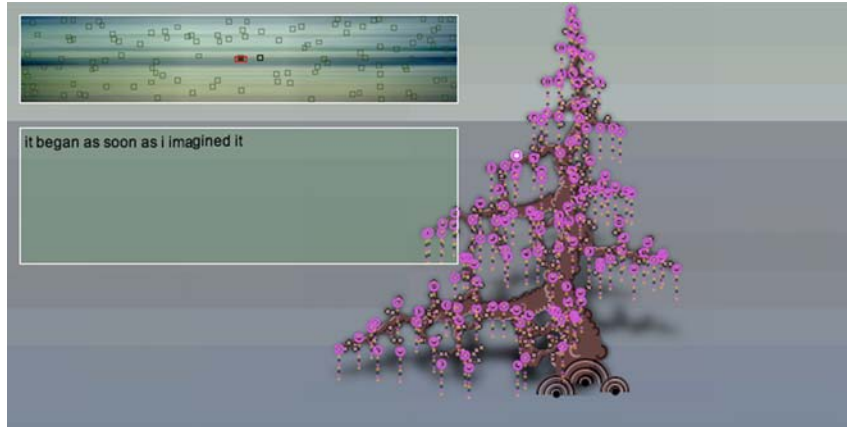
Pedro Amado is a Portuguese communication designer and Assistant Teacher at the Department of Art and Communication (DeCA) of the University of Aveiro (UA). He currently teaches Multimedia.

He previously worked as Design Instructor at the Faculty of Fine Arts of University of Porto (FBAUP) where he obtained a degree in Communication Design (2002) and a Master degree in Multimedia Art (2007) with a thesis on the importance of the emergent models of communication in the creation of type design, from which [www.typeforge.net](http://www.typeforge.net) was born.

Pedro’s ongoing purpose is to bridge the gap between digital multimedia and traditional, beautiful and usable typography.

## Forest of Imagined Beginnings

boredomresearch, *Bournemouth University*  
[info@boredomresearch.net](mailto:info@boredomresearch.net)



Online artwork

### Description

In the *Forest of Imagined Beginnings* users explore a landscape approach to managing and navigating the changing space of an online forum.

*boredomresearch* developed new interactive generative software to create tree structures that recreate the decrepit appearance of fruit trees seen in Japanese Edo Period Paintings (1600-1868) and a 2D renderer that displayed a stylized graphic representation of these tree structures.

In this environment you can navigate through the forest and users can embed their own messages on selected trees which get permanently stored within a mySQL database. This online navigable environment creates a spatially oriented approach to allow alternatives to our established data navigation that respond more intimately to our inherent ability to return to and navigate a remembered space.

*FOIB* was co-commissioned by Folly, Lancaster UK, Enter\_Unknown Territories, International Festival and Conference for New Technology Art, Cambridge UK.

### Artist Statement

Boredomresearch's recent online works have explored how users can engage and affect a web-based ecology, changing quantities and properties for others. They are interested in building environments facilitating dynamic audience engagement. Working with net communities they have further explored concepts of ecology where users engaging with the work are able to influence its direction. *boredomresearch* is interested in developing projects that explore the aesthetic possibilities of dispersed audience participation.

The domain of web technology is normally geared towards speed and efficiency. *Boredomresearch* have been developing online environments which use a simple physics simulation to build in a time consuming inefficiency that cuts against the web technologist normal preoccupation with speed and efficiency. Encouraging a more contemplative and rewarding experience using elements such as chance, hope and intrigue to what is effectively a very simple message board.

### Artist's Biography

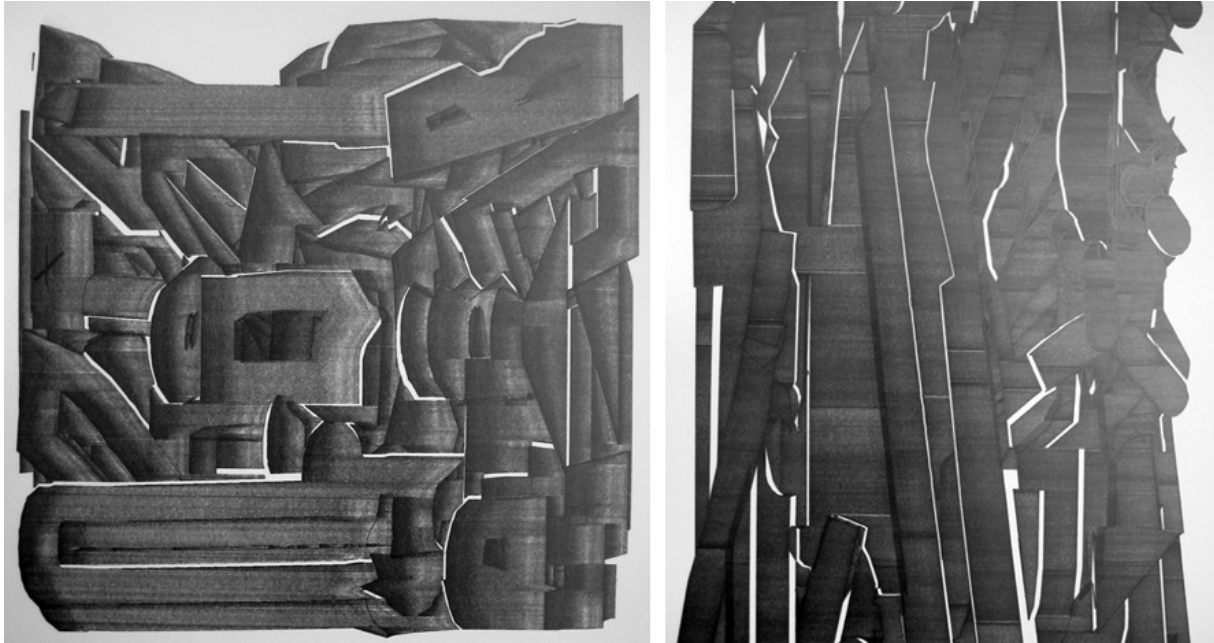
Collaborating as *boredomresearch*, Southampton based Vicky Isley and Paul Smith have gained an international reputation for interrogating the creative role of computing. Their enthusiasm for scientific modelling techniques and fascination with natural systems inspires them to produce beautifully crafted software art that presents an exciting alternative to our technologically fraught lives. Currently, they are both Research Fellows in Computer Animation & Computer Art at NCCA, Bournemouth University UK.

*boredomresearch* have produced a number of interactive sound applications, online projects and computational soundscapes which have been shown at events such as *Third Iteration*, Melbourne (2005), *SIGGRAPH*, Boston (2006), *FILE04*, Brazil (2004) and *Electrohype*, Sweden (2002). Their computational system *Ornamental Bug Garden 001* (2004) has been awarded honorary mention at *VIDA 7.0* Art and Artificial Life International Competition (2005) and *Transmediale.05*, Berlin (2005) and was acquired for the British Council Collection (London).



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01-12-2007-0.32, o.T., Version 2 and X\_Y+ 04-12-2007-01.2

Hans Dehlinger, *University of Kassel*  
dehling@uni-kassel.de



6 images created with pencil and gray scale pen-plotter on paper, each 25cm x 25cm

### Description

Usually, plotter drawings are line-oriented. The pen plotter is not capable of colouring a plane, except by placing single lines very closely against each other. There are certain features, that make such drawings interesting from an aesthetic point of view. Most of them are due to insufficiencies of the mechanical equipment, which is forced to function in a non-standard mode. Such drawings are however very interesting from an aesthetic point of view.

The drawings are generated algorithmically and then subjected to a number of transformations such as, scaling, outlining lines, copy- and-paste operations and random distortions. Depending on the type of paper, the hardness of the graphite lead and the pressure of the pen, results can be manipulated to a surprising bandwidth.

Although pen-plotters are no longer in use for technical applications, their artistic exploration still has a lot to offer.

### Artist's Biography

Hans Dehlinger started to apply computers to design problems as an architectural student at the University of Stuttgart, Germany in the sixties. He has been creating generative art with pen-plotters since 1983. During this time he has been Professor at the Department of Product-Design at the University of Kassel, Germany, and has worked on projects in planning and architecture. He holds a PhD and M.Arch from the College of Environmental Design, University of California, Berkeley. As an artist his focus is on algorithmically generated drawings, executed on pen-plotters.

## Evolving Assemblages

Fernando Graça and Penousal Machado, *University of Coimbra*  
[machado@dei.uc.pt](mailto:machado@dei.uc.pt)



4 digital prints, each 50cm x 70cm

### Description

*Evolving Assemblages* explores the computational transformation of analogue photographs in order to create large-scale assemblages of 3D digital objects. To allow the creation of this type of work, we developed a proprietary software application that evolves populations of object assemblages, which are placed on a virtual canvas, constructing a non-photorealistic transformation of a source image. This biologically-inspired technique is based on evolutionary computation, a field that imitates the fundamental mechanisms of evolution. Our application is guided by the artistic and aesthetic preferences of the user, enabling the user to significantly influence the final outcome of the process and recognize their signature in the evolved artworks.

### Artist Statement

We are interested in the use of computer programming as a form of self-expression, in this case by the development of computational tools that enable the creation of novel artworks that would be (nearly) impossible to produce by conventional means. Additionally, these tools have an impact on the creative process, the artist is no longer solely responsible for the idea: the idea rises via the interaction between artist and tool.

The project *Evolving Assemblages* started as a study in the development of ornamentation techniques. It quickly developed into the creation of large-scale assemblages of objects.

These are characterized by the textures – created through the meshing of objects and by size and rotation changes – and by the varying levels of detail, which abstracts certain zones of the image while emphasizing others considered more relevant.

### Artist's Biography

**Penousal Machado** holds a BSc in Informatics, an MSc in Information Systems and Technology, and a PhD in the field of AI. He now works at the University of Coimbra, where he has been a member of the Cognitive Media Systems of the Centre for Informatics and Systems since 1996, and is a lecturer of the Department of Informatics Engineering. He is the author of approximately 50 papers in the fields of Evolutionary Computation, Computational Art and Artificial Creativity, chaired several scientific events on Evolutionary and Computational Art, and is the recipient of several scientific awards.

**Fernando Graça** is a final year degree student in Communication and Multimedia and a researcher at the Cognitive Media Systems Lab at the Centre for Informatics and Systems. As an artist, he is interested in photography, generative art, and experimental mixed-media approaches. In his work he combines traditional techniques – such as photography, drawing and painting – with computational means. He is also involved in 'creative computing', which led him to develop several proprietary artistic-oriented software applications.

## referenceless

Herwig Turk, *Independent artist*  
[ht@herwigturk.net](mailto:ht@herwigturk.net)



Digital images on lightbox, 100cm x 100cm x 15cm

### Description

The manipulation of external references and social contributions to individual perception of science is further illustrated in the sequence of photographs *referenceless*. *referenceless* is about the impossibility of withdrawing meaning from an image. The photographs created by Herwig Turk on an empty computer screen appear to fulfill this primordial function with scientific precision. The pictures were created artificially to look like something meaningful yet unknown. They translate a subtle attempt to question the symbolic value of legitimacy as a means of ascribing authority and the power of discourse in ascribing meaning to an image.

The photographs presented in *referenceless* seem to be expropriated by the arts and appropriated by science. These are 'scientific' pictures that, in their own context, would represent trivial elements of registering an informational processing. There is, however, rigorous discipline in the production of these images. The pictures represent abstract paradigms of

knowledge, supramatic forms of portraying scientific knowledge, opening new avenues that allows for the questioning of its proceedings.

### Artist's Biography

Herwig Turk is an artist in the field of new technology from Austria, he is currently based in Lisbon, Portugal. In the last years his own successful body of work has been presented at venues like *Georg Kargl Fine Arts Vienna*, *Neues Museum Weserburg Bremen*, *TESLA Laboratory for Media Art, Berlin*, *Museum of Applied Arts / Contemporary Art Vienna* and the *Transmediale, Berlin*. He has also been foremost involved in interdisciplinary art projects like [HILUS braun.mur.at/projekte/hilus/intermed.shtml](http://hilusbraun.mur.at/projekte/hilus/intermed.shtml). Currently, Herwig Turk is working on another major project on the verge of art and science, *blindspot*, together with the Portuguese Scientist Paulo Pereira [www.theblindspot.org](http://www.theblindspot.org).

<http://www.herwigturk.net>



## Blurred Boundaries

Anke Jakob, *Bath School of Art & Design, Bath Spa University*  
[aj@ankejakob.net](mailto:aj@ankejakob.net)



HD Quicktime movie documenting the installation

### Description

The project presented comprises a spatial installation that includes a multilayered composition of differing surfaces and multiple projections. Sequences of digitally animated patterns are superimposed onto these layered surfaces, which are partly modified through printing. This modification causes the light to interact differently with the material and the ink pigment. This results in intriguing illusory effects and an elusive depth. Further, the projected image and the printed image/surface merge in such a way that it becomes difficult to distinguish between the print and the projection, between the real and the virtual.

As a result, an ambiguous, mutable and hybrid environment is generated, where the digital image is transformed into a tangible and tactile experience and where physical and illusionary space can be experienced as an entity.

### Artist Statement

*Blurred Boundaries* emerged as an outcome from my ongoing practical research and experiments exploring conditions, which lead to the fusion of digital imagery/display and

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physical surface/materiality – evoking the confusion and interference of the real and the virtual. In this process, my explorations focus on visual ambiguities and illusions resulting from the interaction between light, material, image and space – playing with our visual perception and sense of space.

Within my current work, overlapping realities and hybrid environments are achieved by applying projection technology in combination with printed surfaces of different visual qualities.

### Artist's Biography

Anke Jakob is an artist, designer and researcher based in London, working with digital media and printed surfaces/textiles. She is a lecturer at Bath Spa School of Art & Design and a partner at architecture and design practice *leitwerk ltd*. She holds a PhD in design (Bath Spa University, UK) and studied textile design at Central St Martins College of Art & Design, London and digital graphics and animation at the Academy for Media & Arts, Cologne, Germany.

## Entre-nous

Emmanuelle Grangier, *University of Paris I*  
(Programming: Fabrice Métais, sound design: Olivier Zol)

[emmanuellegrangier@wanadoo.fr](mailto:emmanuellegrangier@wanadoo.fr)



Interactive audio/video installation

### Description

*Entre-nous* is an interactive and generative installation made up of three screens, a sensitive carpet and a sound system. The visitors have to enter one by one. A specific program is assigned to each screen. The images and most of the sounds are generated in real time.

In the absence of visitor, a low frequency turns in loop. When a visitor stands on the carpet, the sound stops. It is replaced by a frequency of 18000 hertz – inaudible for the majority of the individuals. Nothing occurs.

After fifteen seconds, silence is broken. The visitor's displacement seems to trigger certain processes of evolution on the screens and simultaneously certain sound processes.

For example, on the screen 1, a face immovable. The evolving genetic algorithms are the process of programming used here, each pixel of the skin being defined like an individual.

### Artist Statement

This installation belongs to a research work about bug, more precisely about all that neither is programmed, nor programmable and the question of an aesthetics of accident.

This research is built on transverse relations which it creates between art and certain sciences, in particular genetics and artificial life.

This work questions our perception at the moment of the accident, visual and auditory perception and the perception of our interaction with the system. The interaction developed here is uncertain. The visitor never knows with certainty if he's responsible or not of what happens at the screen and the sound universe.

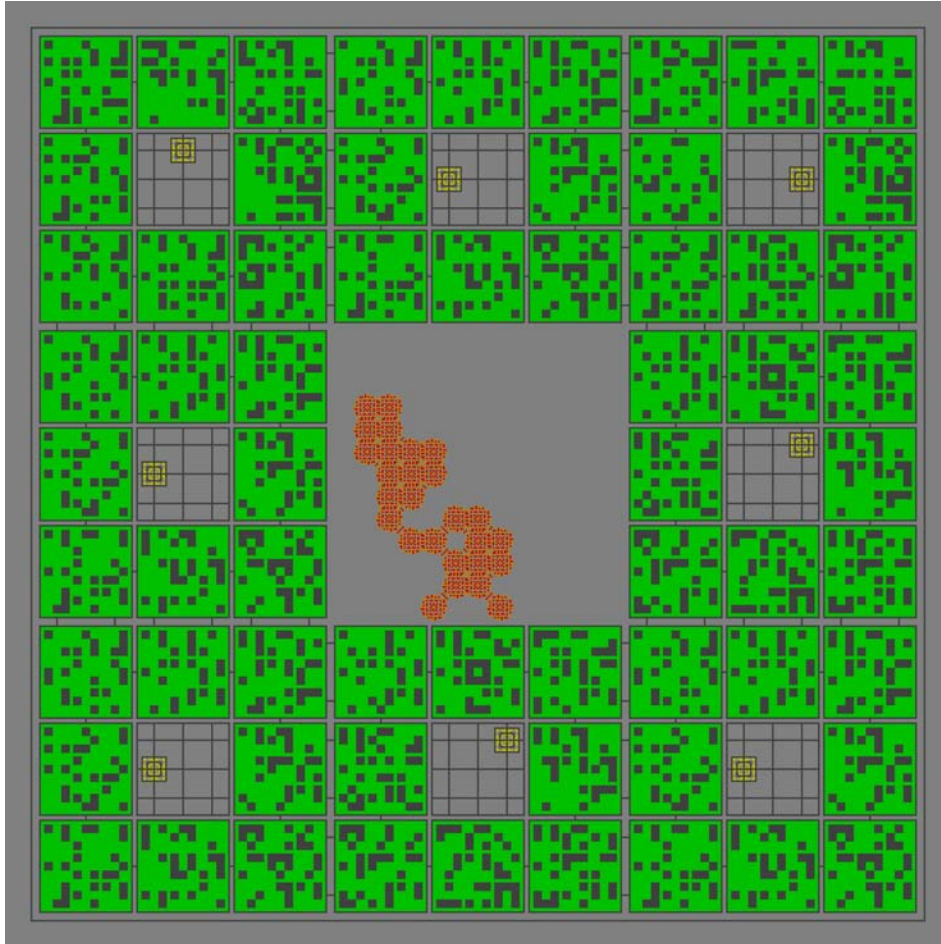
### Artist's Biography

Emmanuelle Grangier is a French artist researcher, working with evolutionary programming. She develops systems of programming which questions our perception of the dysfunction and overall of the accident in the computing systems. This research work started with a PhD in art and sciences of the art (University of Paris I-Pantheon-Sorbonne).

## Ghost in the Machine ... (i. precursors of complexity)

Michael Takeo Magruder, *King's College London*, and David Steele

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Visual art (New Media)

### Description

*Ghost in the Machine ... (i. precursors of complexity)* is composed solely of eight interrelated segments of program code that have been translated into a visual form (while remaining machine-readable) and arranged into a simple logical structure. The resulting framework mimics a biological system by recombining a small number of building blocks to express nearly infinite outcomes. The artwork considers the aesthetic manifestations that arise as a result of these permutations.

### Artist's Biography

**Michael Takeo Magruder** is an American artist based in the UK deploying New and Technological Media within con-

temporary art contexts. His artworks have been showcased in over 200 exhibitions and 30 countries.

**David Steele** is a senior technical consultant based in Arlington, Virginia, USA working with advanced web technology and database architecture. His work has enabled a variety of cutting-edge applications from global text messaging frameworks to re-entry systems for the space shuttle.

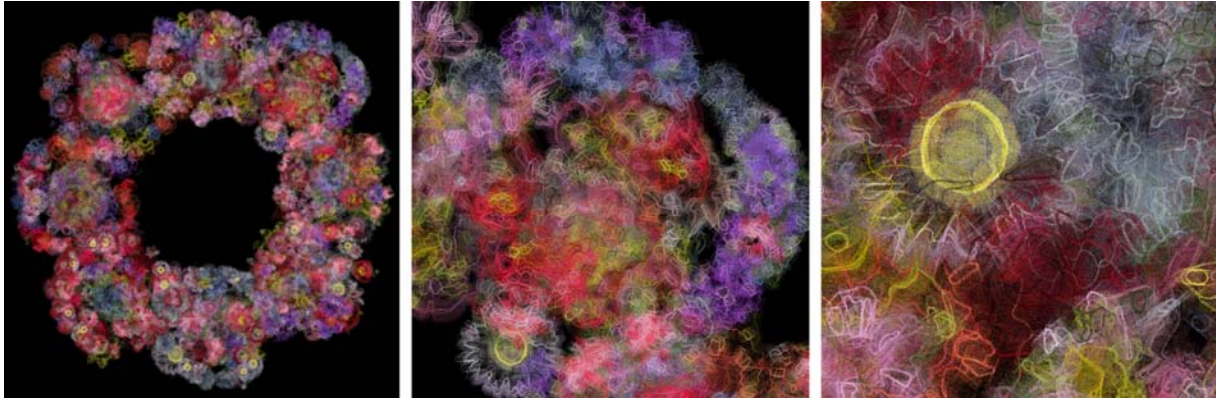
Their current collaborative practice explores the fusion of visual aesthetics and advanced programming to create works that explore concepts ranging from artificial life to the evolution of genetic code.

<http://www.truelogic.com/work/ghost/01/>



## Amelie's Progress Gallery / Imaginations #1

Simon Colton, *Department of Computing, Imperial College, London*  
[sgc@doc.ic.ac.uk](mailto:sgc@doc.ic.ac.uk)



4 Digital prints - 89cm x 38cm, 100cm x 100cm, 185cm x 40cm, 203cm x 40cm

### Description

The *Amelie's Progress* Gallery pays homage to the fine acting skills of Audrey Tatou in the film *Amelie*, where she portrays a range of emotions. The gallery contains 222 portraits of the actress which were generated automatically by *The Painting Fool*. From left to right, the emotions portrayed range from very sad to very happy, and the painting styles fit this scheme. The gallery also contains 24 short video sequences of *The Painting Fool* producing the portraits.

The *Imaginations #1* Gallery is a work in progress, and currently contains three large, multi-faceted images. Firstly, there is a (simulated) pastel and pencil painting of a wreath-like arrangement of flowers. Secondly, there is a (simulated) pastel and pencil painting of Madrid, which consists of dozens of paintings of buildings taken from Google's 3D Warehouse, arranged shambolically to create an overall disorienting effect. There is a similar (simulated) pencil sketch of London.

### Artist Statement

With each new gallery produced by *The Painting Fool* (in collaboration with me), its abilities expand to include more behaviours exhibited by artists. With the *Amelie's Progress* gallery, *The Painting Fool* was trained to appreciate how its painting styles can heighten the emotional content of a portrait. To do this, I developed an expert system to map key-

words such as 'happy' or 'sad' onto painting styles (which include colour palettes, abstraction levels, natural media choices, etc). With the *Imaginations #1* gallery, I'm expanding *The Painting Fool's* abilities to create and paint scenes from its imagination (inspired by Cohen's AARON program), for example by using evolutionary techniques.

### Artist's Biography

Simon Colton is a senior lecturer in computing at Imperial College, London. He researches the development and application of Artificial Intelligence techniques for creative tasks such as mathematical invention, scientific discovery and painting. In the last five years, he has embarked upon a personal odyssey to build an automated painter called *The Painting Fool*. It is his intention that *The Painting Fool* is eventually taken seriously as a creative artist in its own right. To achieve this, he is equipping *The Painting Fool* with behaviours which are skilful, appreciative and imaginative.

The *Painting Fool's* city series of artworks was presented at the 2006 Computer Generated Artworks exhibition, and a live demonstration was given at the Darwin Festival in Shrewsbury. By combining *The Painting Fool* with an emotion detection system (also developed at Imperial), the team won the BCS Machine Intelligence Competition in December 2007.

<http://www.thepaintingfool.com>