

# Digital grand challenge

Innovative Multidisciplinary Research Projects  
and collaborations to redefine problems outside  
ordinary boundaries

University of Greenwich

Faculty of Architecture  
Computing and Humanities



## About The Digital Grand Challenge [DGC]

Digital technologies have become a significant part of our society; almost every product and field of work includes digital design or digital technologies at some point. By developing innovative research projects we can research on how theory can shape digital practice and vice-versa; as a way to enhance multiple interactions across numerous disciplines, including, Arts and Design, Architecture, Computing, Humanities, Mathematics and other Sciences.

Digital Grand Challenge website:  
[blogs.gre.ac.uk/digitalgrandchallenge/](https://blogs.gre.ac.uk/digitalgrandchallenge/)

University of Greenwich  
Faculty of  
Architecture Computing and Humanities

Old Royal Naval College  
30 Park row  
Greenwich, London SE10 9LS

Stockwell Street Building  
10 Stockwell St,  
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## The Grand Challenges

One of our tasks as a Faculty is to bring students and academics together with the goal of building the Faculty community and exciting curiosity in learning and discovery.

The Faculty of Architecture Computing and Humanities run a series of 'Grand Challenges' combining research with learning and teaching; undergraduate with postgraduate; the workforce with the student body.

The six challenges are chaired and led by the Deputy Pro Vice Chancellor Prof Neil Spiller, Research and Enterprise lead for the Faculty.

Academic staff have been appointed to lead on each of the Grand Challenges and we anticipate that APT&C members of staff might like to join academic members of staff in some of these projects. We will be inviting some of our most trusted friends and partners if they would like to join us.

## FACH

The Faculty is a large, interesting, multidisciplinary faculty with over 10,000 students and 345 permanent full-time staff.

The faculty is based at Greenwich Campus, including the new teaching site in Stockwell Street, where the department of Creative Professions and Digital Arts hosts the DIGITAL Grand Challenge Research clusters.

This diverse faculty covers a wide range of discipline areas and its research areas provide many rich opportunities for collaboration between students, staff and departments both within the faculty and with the rest of the university.

## Inspired and led by

### Professor Neil Spiller

Prof Spiller is the Leader of the six Grand Challenges. He is the Deputy Pro Vice-Chancellor and the Hawksmoor Chair of Architecture and Landscape; founding director of the Advanced Virtual & Technological Architecture Research Group (AVATAR); a unit tutor for Unit 19 of the Diploma Architecture programme; and a practising architect.



### Anastasios Maragiannis

Anastasios is the Co-Leader of the Digital Grand Challenge. He is also the Academic Portfolio Leader and Principal Lecturer in Design Theory and Practice with a background in graphic design, interactive media and screen based typography. Anastasios is also the coordinator of internationalising and Partnerships for the newly-formed Dept of Creative professions & Digital Arts.



### Professor Choi-Hong Lai

Prof Lai is the Co-Leader of the Digital Grand Challenge & head of the Numerical and Applied Mathematics Research Unit. He came from a background of mathematics with engineering, aerodynamics, parallel computing, novel numerical algorithms & applied mathematics. He is a visiting prof at Jiangnan University, Fuzhou University and Buckingham University.



# The Digital Grand Challenge ongoing projects

## 1. Global to Local: Intersubjectivities

Design and the other.

Beyond the instrumental, what is enabled when designers design with, and for, others? Seen as an intersubjective action what do design and designers enable through their material thinking with others? This project brings together a diverse group of informed and interested scholars and practitioners, both theoretically focused and practice-led.

## 2. Digital Type: Innovative ways of reading:

The first Symposium on screen based text. A research project to offer an analysis of how computational technologies impact on the existing principles and forms of static text and in particular typography in the DIGITAL age. The research explores how innovative processes of design evolve within creative media.

## 3. The Future is: International collaborations

Across the screen International collaborations. Experimental workshops to investigate the impact of digitality in our everyday communication.

## 4. [DRHA2014]

Digital Research in the Humanities and Arts International Conference.

## 5. Local to Global: Research Clusters to Impact the Digital World.

A series of onsite research clusters across a specific period of time organised to facilitate and bring together participants (PhD, academics, post doctorate and post graduate). The research clusters will engage and motivate colleagues from the Faculty to work in a collaborative way that will affect the local but also the global community.

## The Digital Grand Challenge ongoing projects

### Overall aims of Digital Grand Challenge projects

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**Network** and exchange knowledge, encouraging cross disciplinary skills transference between the academic participants in UoG in the FACH

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**Facilitate** a sharing of participants expertise and creative project ideas involving the use of digital technologies

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**Enable** common language, to ease communication between humanities, sciences, design and others

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**Explore** links between research, teaching and outside impact

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**Identify** strengths in current creative innovation / research expertise – lines of interest, themes, and research activities

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**Identify** gaps in expertise requiring additional partners from within or from outside UoG, from SME / business sector, from other universities, public sector

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**Explore** the innovative use of digital technologies of many types for use in the creation, conservation, reconstruction, interpretation and preservation of cultural works, artifacts, sites, platforms and tools

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**Pinpoint** ideas that might qualify for small amounts of proof of concept funding to prepare and demonstrate a concept

Our Team intend to:

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**Examine** the funding landscape over the next 3-5 years and identify opportunities for applications to funding bids which support the interdisciplinary and innovative use of digital technologies

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**Identify** potential links between various project ideas for onwards development

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**Package** or cluster projects in order to address these funding opportunities

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**Aim** for triangulation funds from university system creative industries/ business and from public sector

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**Explore** the release of in-house UOG digital research projects into the relevant community of need / impact beyond the university

These clusters are part of ongoing conversation, leading to feedback and improvement throughout the research project

## Ongoing projects

# 1 Global to Local: Intersubjectivities Design and the other

### In collaboration with:

CPDA Department UoG,  
RMIT - Australia,  
Goldsmiths, University of London  
University of the Arts London  
Dirty Furniture publication



Beyond the instrumental, what is enabled when designers design with, and for, others?

Seen as an intersubjective action what do design and designers enable through their material thinking with others.

This discussion is informed by an understanding of design as a holistic action with the capacity to simultaneously achieve both epistemological and ontological shifts.

The research symposium brings together a diverse group of informed and interested scholars and practitioners, both theoretically focused and practice-led.

Issues around the intersubjective action enabled through design practice are interrogated in order to amplify, diversify, and mobilise this under-investigated aspect of practice and discourse. This research debate aims to lead to a series of scholarly papers and thereby to broader discourse around the event's themes

### Organisers:

#### **Anastasios Maragiannis**

Department of Creative Professions and Digital Arts,  
University of Greenwich

#### **Neal Haslem**

Communication Design,  
School of Media and Communication,  
RMIT, Australia

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### Attendees:

#### **Stephen Kennedy**

CPDA Research Coordinator  
Principal Lecturer

#### **Stacey Pitsillides,**

CPDA Department,  
University of Greenwich

#### **Allan Parsons**

Spatial Practices Programme,  
Central Saint Martins

#### **Terry Rosenberg**

Design Department, Goldsmiths,  
University of London

#### **Elizabeth Glickfeld**

Editor and co-founder of Dirty Furniture

#### **Duncan Fairfax**

Design Department,  
Goldsmiths, University of London

#### **Elena Papadaki**

CPDA Department,  
University of Greenwich

## Ongoing projects

# 2 Digital Type: Innovative ways of reading

The University of Greenwich CPDA Department and the Arts and Computational Technologies group at Goldsmith's, University of London, are funding a research project to offer an analysis of how computational technologies impact on the existing principles and forms of static text and in particular typography in the DIGITAL age. The research explores how innovative processes of design evolve within creative media.

More specific, it explores the use of text through visual portable 'mobile' technologies and attempts to review the way we read and behave when we are on the move.

The point being that rather than potted histories and snapshots a cultural, Digital and economic field of impact has been brought together for consideration. Initially, the industry Symposium will enable the examination of current issues of screen-based typography, thinking and ideas.

The findings will be used to reflect upon and situate any current practice based projects and therefore the findings of this research. Monotype [www.monotype.com](http://www.monotype.com) support the research by inviting industry contacts to the Symposium and helping to publicise the research.

This exploration and collaboration would be the starting point for the formation of an innovative 'Digital Typography Research Hub'

### Symposium Goal:

Investigate the challenges of screen-based typography. With an input from creative industry leaders.

### Attendee profile:

Design, business and development stakeholders involved with the specification of type systems to deliver cross-platform experiences from leading brands, agencies, media and technology companies.

### Organisers:

#### Anastasios Maragiannis

Department of Creative Professions and Digital Arts,  
University of Greenwich

&

#### Monotype LTD

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### Attendees

#### Gerry Leonidas

Associate Professor of Typography  
University of Reading

#### Brian La Rossa

Art Director  
Scholastic

#### Dave Crossland

Font consultant  
Google

#### Dave Dunlop

Creative Director  
and Partner Else

#### James Fooks-Bale

Monotype

#### Julie Strawson

Brand Perfect

#### Janis Jefferies

Prof Visual Arts - Assoc Pro Warden-  
Creative & Cultural Industries  
Goldsmiths, University of London

#### Stacey Pitsillides

Lecturer in Design  
University of Greenwich

#### Nadine Chahine

UK Type Director  
Monotype

#### Lesley Saxton

Interactive Art Director  
at Ralph Lauren NYC

#### Warren Hutchinson

Experience Design Director & Founder

#### Theresa Mershon

Creative Director  
Hearst Digital Media Hearst



## Ongoing projects

# 3

## The future is: International collaborations

An experimental workshop to explore the impact of computational technologies in our daily communication .

The Technical University of Athens, in Greece, the Harvard University – Centre for Hellenic Studies in Greece (CHS GR) and the CPDA department in the FACH, University of Greenwich working together to explore the Digital Future.in creative environments and language.

A series of workshops and symposiums across Europe (Athens, and London), under the theme of the Digital creativity and Digital computational technologies.

### Organisers:

#### **Anastasios Maragiannis**

Department of Creative Professions and Digital Arts, University of Greenwich

#### **Prof Choi-Hong Lai**

CIS, University of Greenwich

#### **Prof Petros Stefanias**

National Technical University of Athens, Greece



# International Conference

# 4 Digital Research in the Humanities and Arts DRHA2014

Human beings, as users, have always been obsessed with finding new ways of communicating through various techniques and technologies.

The rapid technological changes that have occurred during the last two decades have allowed us – the users – to communicate through various social media platforms, providing us with more

easily, faster and more frequently ways of communicating.

However there are always concerns about other impacts those technologies might have on the communication processes.



The aim of the conference was to facilitate conversations on Design and collaborations between Digital Arts and Humanities, Creative Industries, Digital Libraries and Archives, with an emphasis on communication futures and their impact to historical, theoretical, knowledge-transfer research processes.

For the first time, the Digital Research in the Humanities and Arts DRHA conference supported and brought together the Academic environment with that of the Creative industries under a conference that affected the current interdisciplinary creative practices.

For over 18 years DRHA: Digital Research in the Humanities and Arts (Previously named: Digital Resources in Humanities and the Arts) continues to be a key gathering for all those are influenced by the digitization of cultural activity, recourses and heritage in the UK.

A series of annual conferences whose goal is to bring together the creators, users, distributors, and custodians of digital research and resources in the arts, design and humanities to explore the capture, archiving and communication of complex and creative research processes.

This includes: Scholars, teachers, artists, publishers, librarians, curators or archivists, who all wish to extend and develop access and preservation regarding digitized information rendered from contemporary culture and scholarship; the information scientist seeking to apply new scientific and technical developments to the creation, exploitation and management of digital resources.

DRHA provides intellectual and physical space for cross-disciplinary discussion and the generation of new ideas, resulting in many new networks and productive research relationships. The DRHA conference started at Dartington, and it was a development from the DRH conference series which began at Oxford in 1997.

Anastasios Maragiannis  
DRHA2014 Convenor  
and Deputy Chair of DRHA Organisation  
[www.drha2014.co.uk](http://www.drha2014.co.uk)

Stacey Pitsillides  
DRHA2014 Deputy Convenor

## Ongoing projects

# 5

Local to Global:  
Research Clusters  
to Impact the Digital World



**L**ocal to Global: Research Clusters to Impact the Digital World. A series of onsite research clusters across a specific period of time organised to facilitate and bring together participants (PhD, academics, post doctorate and post graduate). The research clusters will engage and motivate colleagues from the Faculty of Architecture, Computing and Humanities (FACH) to work in a collaborative way that will affect the local but also the global community.

## Disappearing Film / Lost Worlds

A documentary exploring the development of British celluloid film labs since 1945 and its decline with the arrival of digital technologies. The documentary will be based on video interviews of labs workers and extensive archive research. Outputs will be a full-length documentary, journal articles and an exhibition.

## 01

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### Dr Andrew Dawson

A.Dawson@greenwich.ac.uk

Principal Lecturer

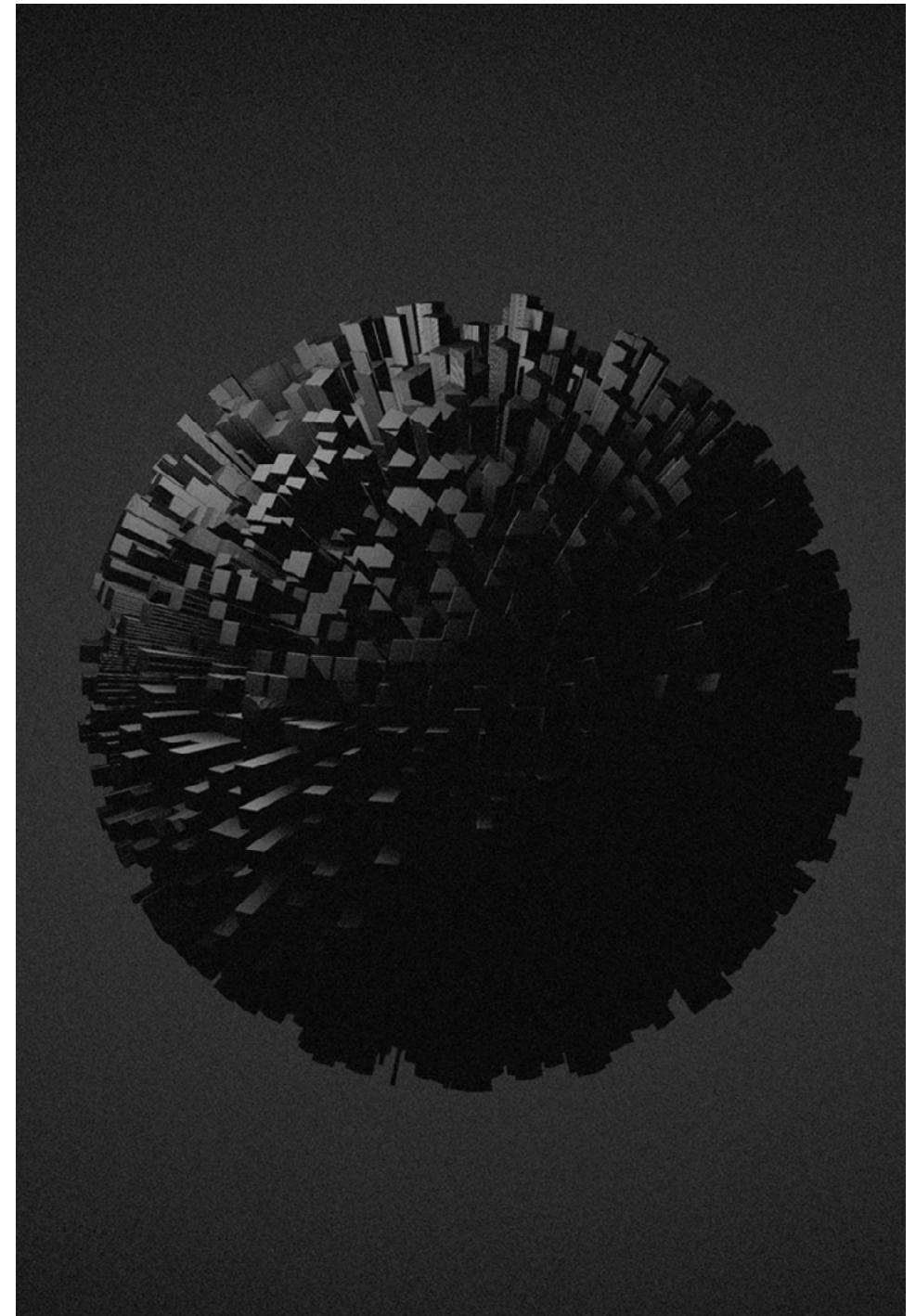
(Teaching Fellow)

### Key Words

Film labs, skills & craft labour, celluloid to digital, documentary

### Impact Opportunities:

Community, engagement with third sector organisations, touring and distribution, audience



## Sound & Context

A project investigating the relationship of sounds with image, place/space and its modes of presentation, as well as the understanding and interpretation of the audience.

## 02

### Dr Andrew Hill

Lecturer in Sound Design  
and Music Technology

A.Hill@greenwich.ac.uk

### Key Words

Sounds in relation to image,  
space, audience, music  
practice

### Impact Opportunities:

performance, installation,  
engagement with the  
public, public space



## Augmented environments

An interactive installation that embodies Greenwich, using augmented reality projections with an array of sensors for participants to explore and experiment their environment.

## 03

### Darrenlloyd Gent

Undergraduate Coordinator  
(Games and Digital Media)

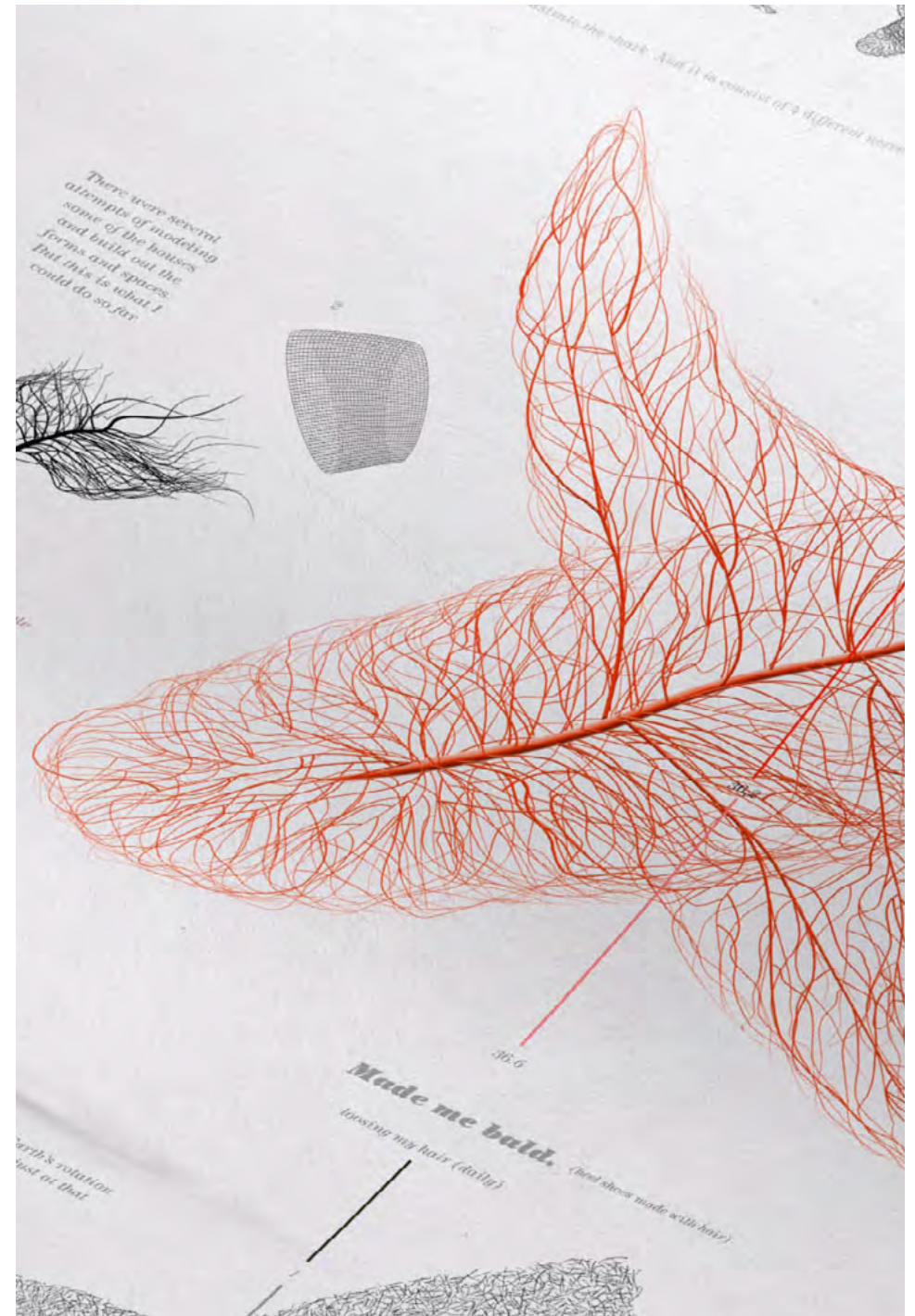
D.T.Gent@greenwich.ac.uk

### Key Words

Interactive installation,  
AR and sensors, virtual  
projections, Greenwich,  
public space

### Impact Opportunities:

Engagement with the  
public, performance,  
installations, public space



## Autonomous Vehicles

A project using data for gateway, autonomous vehicles and ageing population.

## 04

### David Jai-Persad

Business Development  
Manager greenwich  
research and Enterprise

D.A.Jai-Persad  
@greenwich.ac.uk

### Key Words

Ageing population, use  
of data for gateway and  
autonomous vehicles

### Impact Opportunities:

Society, senior citizen,  
health & well being,  
political



## Cyberama

Cyberama will be a multi partner large scale European project looking at the future of theatre and performance. It will explore the multi-sensory experience of the audience, the role of the performer, the new possibilities offered by new technologies such as holograms, neuroscience, streaming, tactile and smart materials. The output of the project would include an Open Call, a series of residencies, knowledge sharing, workshops etc.

## 05

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Hannah Lammin  
Hannah.Lammin  
@gre.ac.uk  
Research Scholar  
and

### **Dr Fahrudin Salihbegovic**

Lecturer in Media Arts  
Digital Production  
F.Salihbegovic  
@gre.ac.uk

### Key Words

Ageing population, use  
Europe, future theatre,  
digital technologies,  
audiences and public  
spaces

### Impact Opportunities:

Europe, international,  
engagement with public,  
engagement with public/  
private sectors and third  
party organisations,  
society, artistic mobility





**“You know how to play ping pong”:  
Content analysis of employer  
requirements in entry-level job  
advertisements**

What do employers want from graduates? We seek to answer through content analysis of a large dataset of job advertisements, using data from Enternships, a recruitment agency specialising in internships and entry level roles for startups and small-to-medium sized enterprises. The project looks at what requirements employers articulate in their advertising. In analysing the content, a coding frame is used, comprising five large categories of requirements: Communication, Organisation, Personal Qualities, Qualifications, and Technical.

**06**

**Dr Gauti Sigthorsson**

Principal Lecturer Media  
Studies

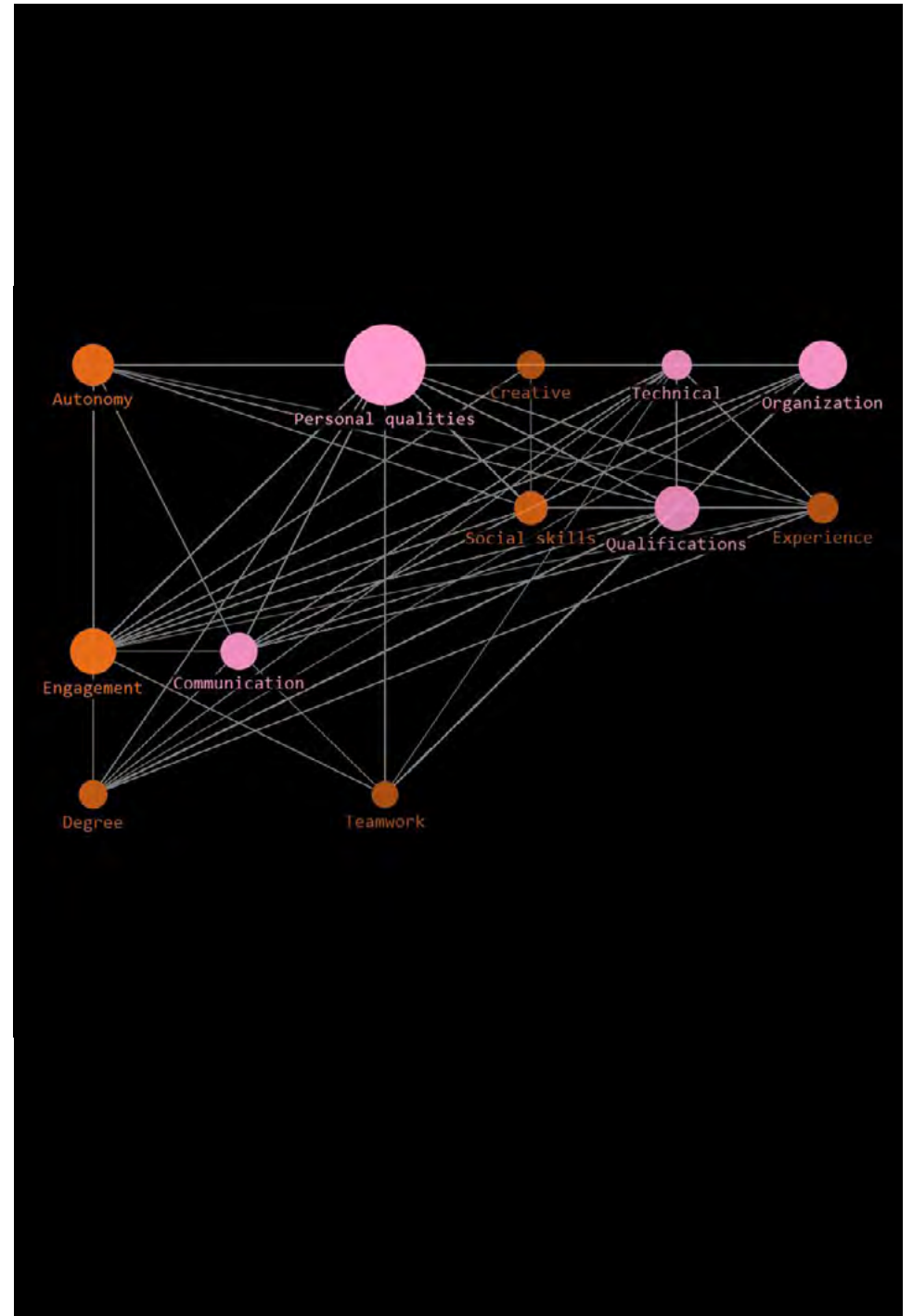
G.Sigthorsson  
@greenwich.ac.uk

**Key Words**

Skills, content analysis,  
jobs and careers, graduate  
employment, digital roles

**Impact Opportunities:**

Community, economy,  
engagement with private  
sector, policy, education,  
HR, skills





## Haptic narratives / Just a second ago

A project exploring the sensorial and textural environment of the Creekside / Deptford local heritage through haptic technologies. Bringing together artists and academics project aims at generating new ideas and method to explore local narratives and perpetual change to produce a publication and a multi-sensory digital exhibition.

## 08

### Dr Isil Onol

Senior Lecturer in Design and Digital Arts

I.Onol@greenwich.ac.uk

### Key Words

Haptic technologies, communities, textures,, Deptford, publication, multisensory exhibition

### Impact Opportunities:

Engagement with the public, environment, international, culture, installation



## Maker Space

The purpose of this project is to develop a Maker Space, a space for makers, artists, programmers, tinkerers and researchers to meet, collaborate, share ideas, and develop possibilities and new skills. Whilst a physical space is implied, the project refers more broadly to a developmental space, a mind space where conversations and ideas can be generated and tested.

09

### Jesmond Lewis

Senior Lecturer in  
Multimedia, Film & TV  
Production

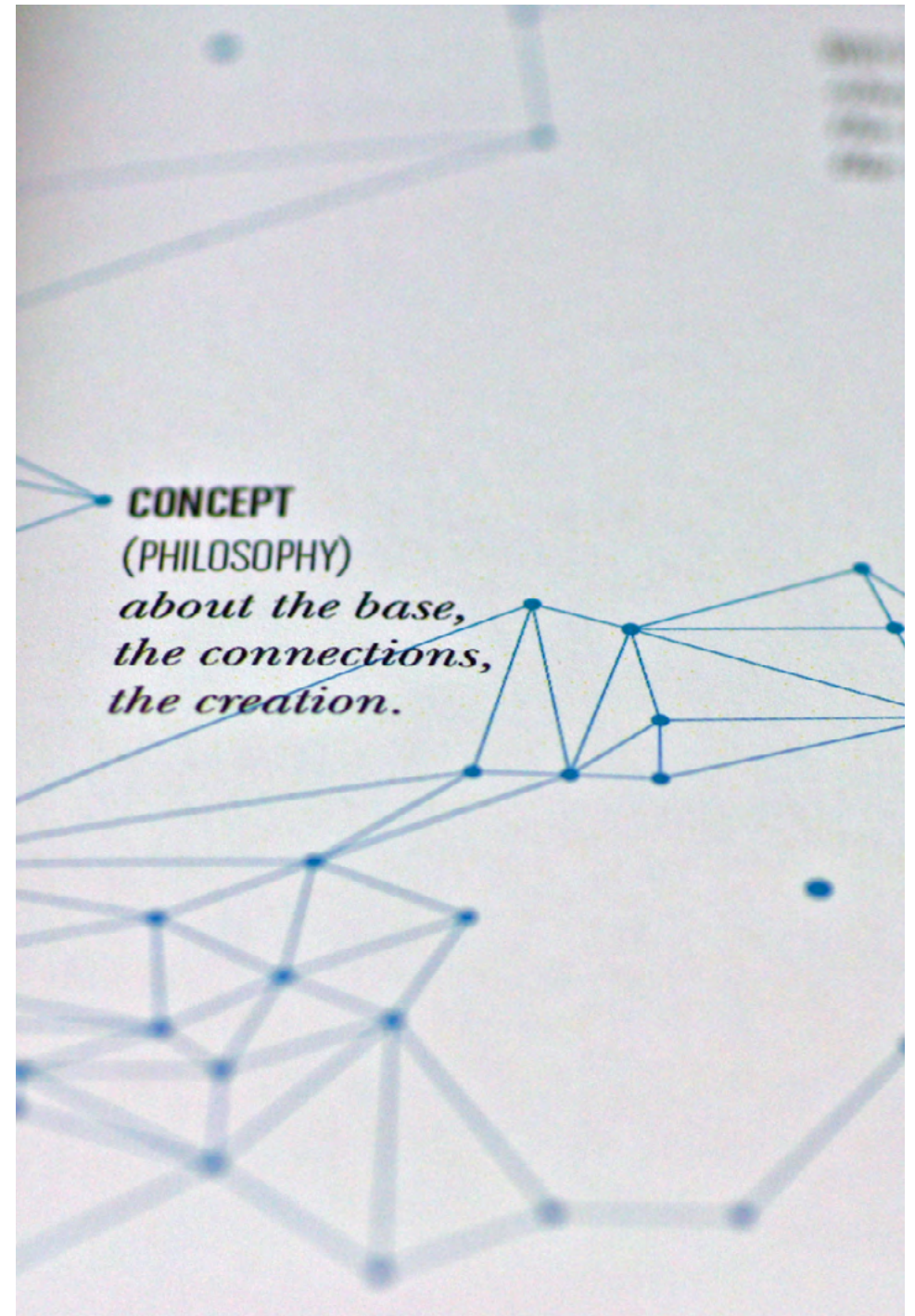
J.C.Lewis@greenwich.  
ac.uk

#### Key Words

Maker space, collaboration,  
Greenwich, innovation,  
community

#### Impact Opportunities:

community, culture,  
engagement with  
the public, economic  
development



## Song Series Animacy

A practice-based research project exploring the relationship between song, human voice and 2-D geometric shape visualisation. The aim is to extend expressive language and communication, to give to the viewer a profound sense of the emotion and physicality, by visualising the breath of a song, the tempo, micro-nuance etc

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### Julie Watkins

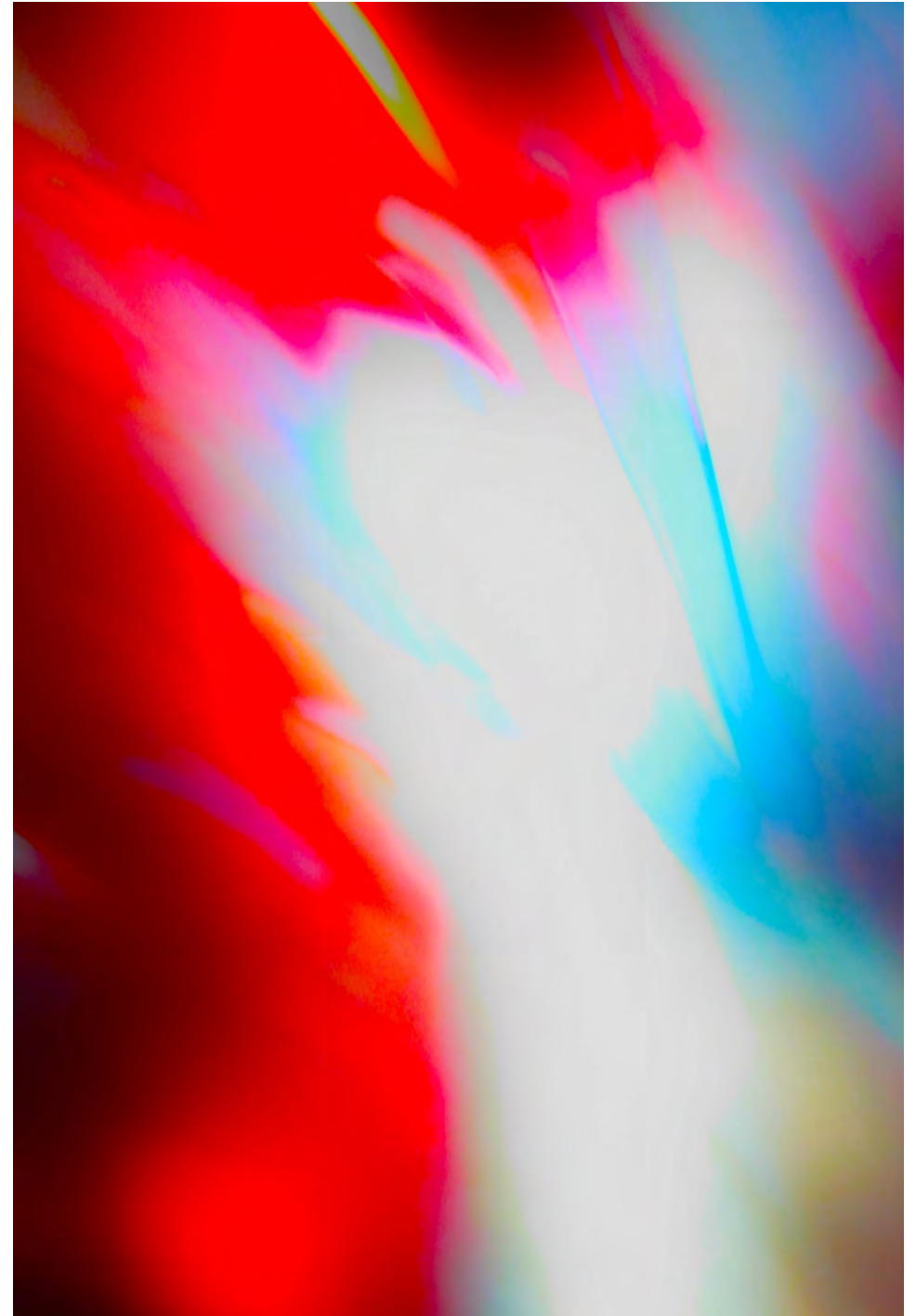
Senior Lecturer in  
Multimedia Technologies  
J.Watkins@greenwich.  
ac.uk

### Key Words

Emotion, song, voice, song  
visualisation, 2D

### Impact Opportunities:

Health and well-being,  
quality of life, culture,  
engagement with the  
public



## Engaging Spaces

This project is for the onward development of a 3D mapping project presented as part of the Peckam Free Film Festival events each year since 2013. The 10 foot tall façade of Peckam's Brayards Estate is transformed by an evening of sound, projected light, digital animations and 3D mapping. Visualisations are produced by a team of students from the UOG, directed by Manos Kanellos and Jim Hobbs.

## 11

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### Emmanouil Kanellos

E.Kanellos@  
greenwich.ac.uk

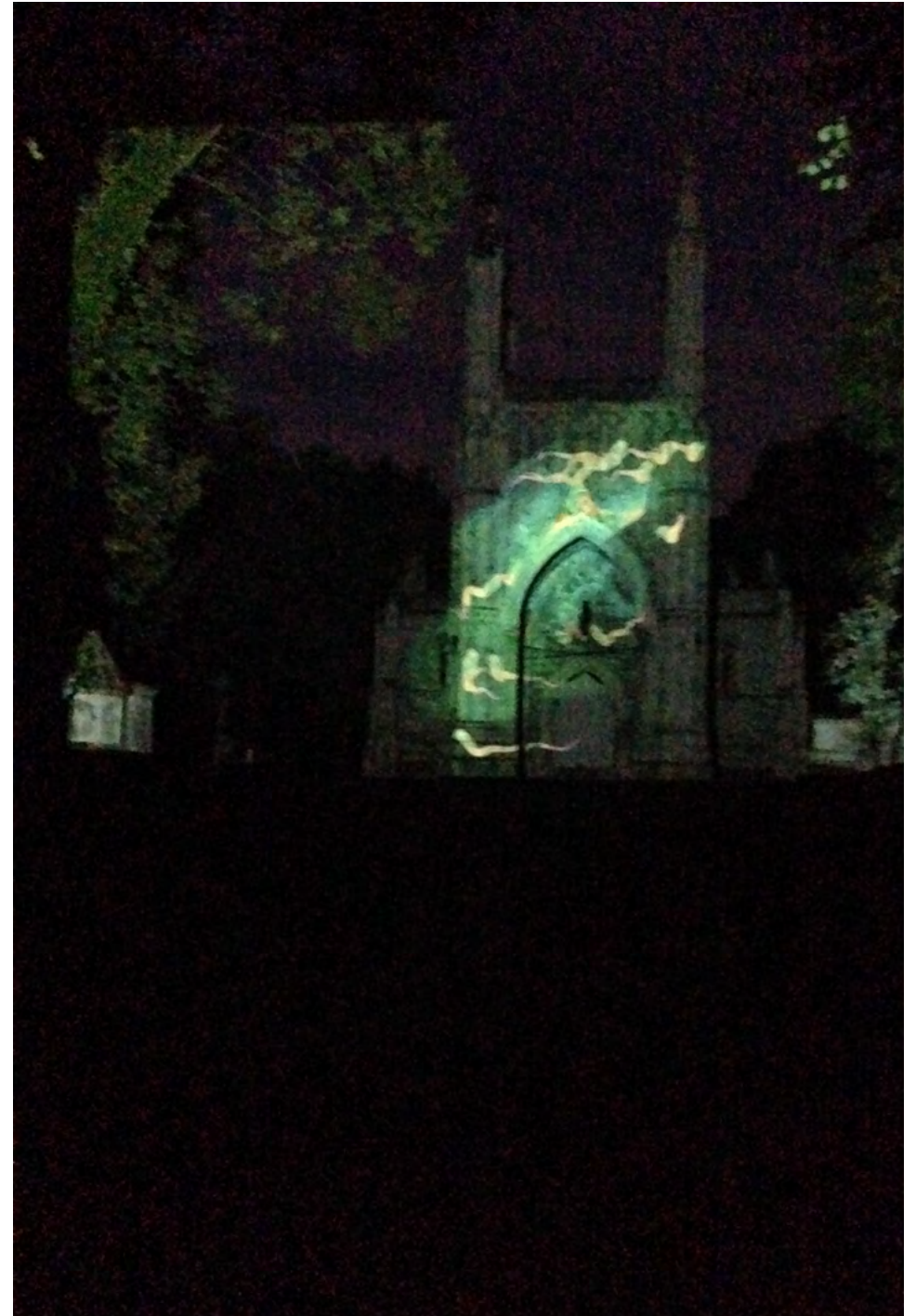
Senior Lecturer in 3D Digital  
Design & Animation

### Key Words

Public facade, festival,  
VJ, students, 3D mapping  
projects, local community

### Impact Opportunities:

Engagement with the  
public, community,  
culture, installation,  
society



## Creative Conversations

A research network that will bring together publishing/literature key organisations in the UK and internationally together to focus on digital writing/publishing, new business models and platforms, audio storytelling. Through events and web resources, the community will exchange knowledge and expertise on future developments and trends.

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### Rosamund Davies

Senior Lecturer, Media and Creative Writing

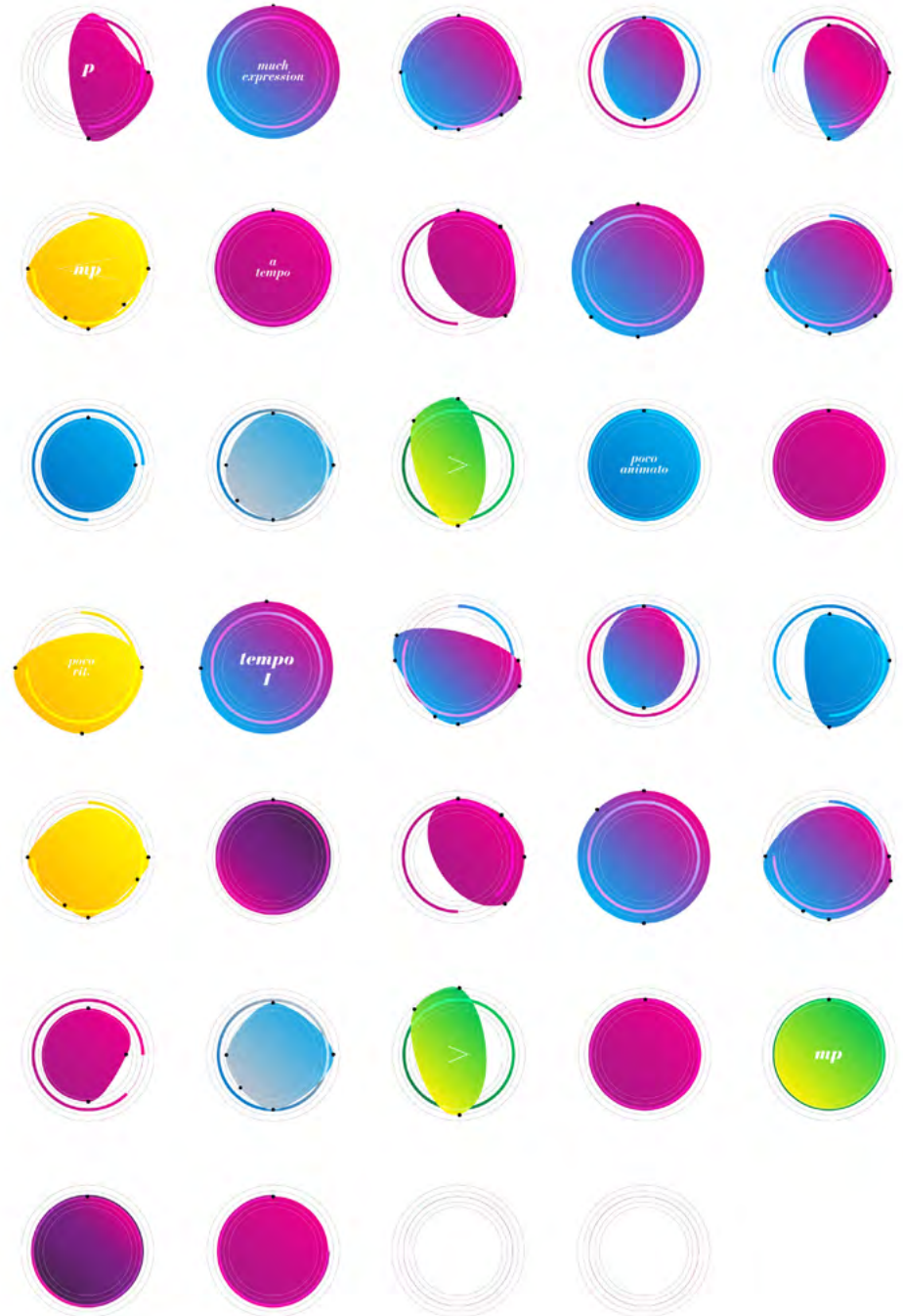
R.Davies@greenwich.ac.uk

#### Key Words

Creative conversation, digital publishing and writing, business models, audio storytelling, communities and market, knowledge exchange

#### Impact Opportunities:

Community, society, economy



## Making London

Making London is part of a series of events organised by Creative Conversations and the XDs. It is a design led event bringing together a community of creative organisations, practitioners, researchers and students to rethink the relationship between the market economy and communities. The first event took place on 18th July in Stockwell Street and will be followed by an event in October to explore any ideas that participants would like to develop further.

## 13

**Stacey Pitsillides**

Lecturer in Design

S.O.Pitsillides

@greenwich.ac.uk

### Key Words

Design-led event, debates, markets and communities, social hackathon, designers and non designers

### Impact Opportunities:

Community, social problems being addressed, environment, international, economic





### In Memory of their Digital lives

This project focusses on helping people to decide how they want to remember their loved ones digital lives after death in new and creative ways. Bringing together a worldwide community of multi-disciplinary of experts and professionals the project aims to creatively rethink some of the processes and regulations that hospices use to deal with digital experiences and how patients may want to approach this in future.

## 14

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### Stacey Pitsillides

Lecturer in Design

S.O.Pitsillides

@greenwich.ac.uk

#### Key Words

Design-led event, Death, memory, digital heritage and belongings

#### Impact Opportunities:

Community, quality of life, environment, social problems being addressed, engagement with public sector and third sectors organisations



## Echo:state Project

This project explores the relationship between music and sound environments and the possible events in the society. How can Complex Adaptative Systems (CAS) modelling be applied to the world of sound? Drawing upon developments in the field of cultural analytics and computer aided qualitative data analysis the project will identify and code a range of sonic phenomena within a related context of political and economic events. The objective is to produce a prediction tool for socio-economic based events using the resulting model.

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### Dr Stephen Kennedy

Research Coordinator  
Principal Lecturer

S.Kennedy@  
greenwich.ac.uk

and

### Prof Choi-Hong Lai

Professor of Numerical  
Mathematics

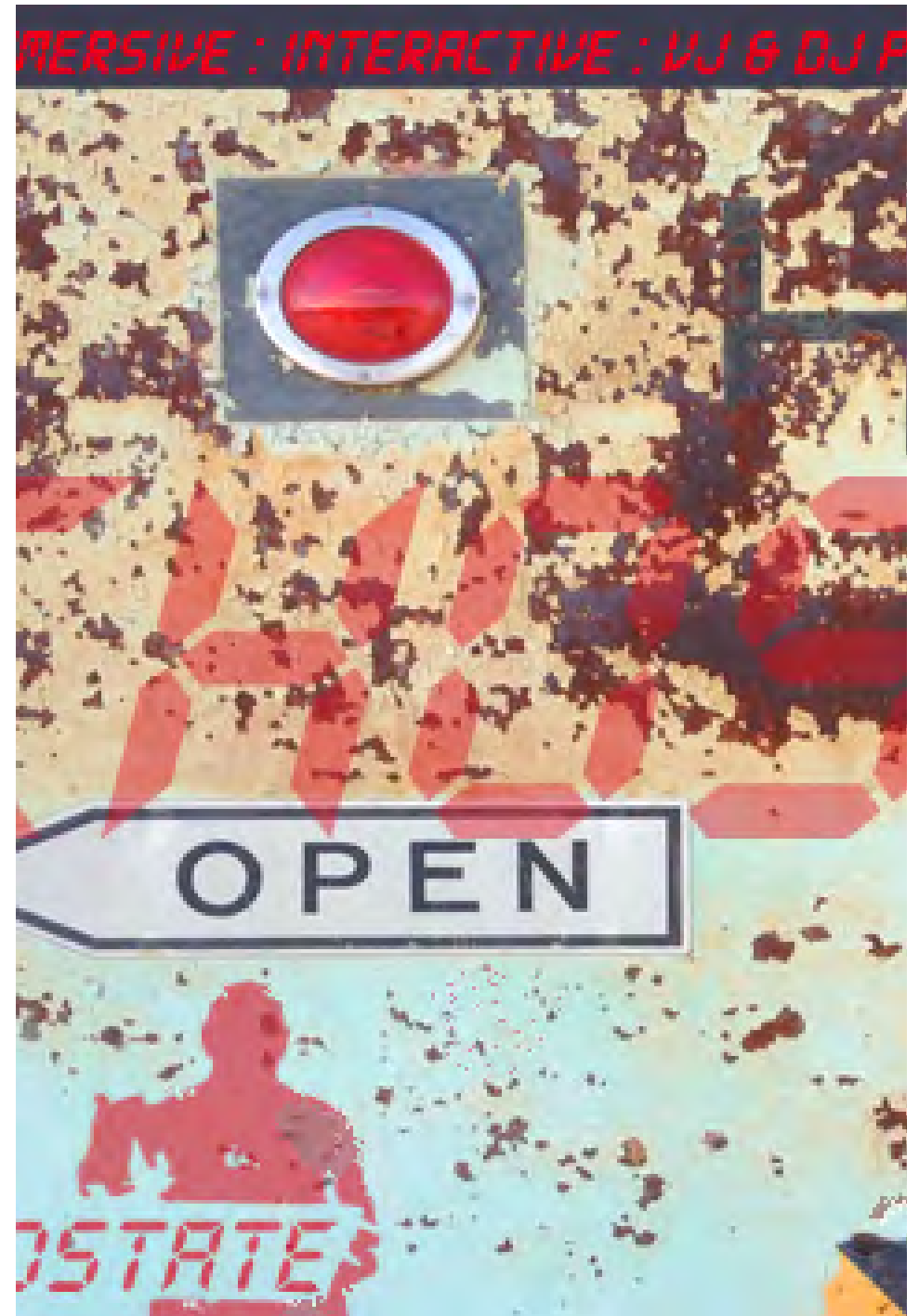
C.H.Lai@greenwich.ac.uk

### Key Words

Design-led event, Death,  
CAS, sound world,  
political economies, sonic  
methodologies, data  
analysis, prediction

### Impact Opportunities:

Community, economy,  
culture, engagement with  
the public



## Design Principles: Innovative Perspectives in Visual Arts

This project explores how the way we read on the screen can create new forms of online collaborative writing and design interfaces. As the younger generation moves swiftly from print to pixel, reading no longer becomes deliberate and concentrated but rather a scan for information as our eyes follow an F-shaped pattern. Screen-reading encourages rapid pattern-making, provoking action, whereby words are merged with images. From scroll to moveable type, will twitter 'novels' give rise to twitter brains? How does it affect what we read and write? Has this change been recognized in the publishing and design industry?

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### Anastasios Maragiannis

Academic Portfolio Leader  
Principal Lecturer in Design

Co- Leader Digital Grand  
Challenge

a.maragiannis@gre.ac.uk

#### Key Words

Screen; Reading, Writing,  
Graphics, Twitter, Novels;  
Brains: Technology; Type;  
behavior; Design

#### Impact Opportunities:

community, economy,  
culture, engagement with  
the public, international,  
creative industries



# Organising team for the Digital Research Clusters

## **Anastasios Maragiannis**

Anastasios is the Academic Portfolio Leader and Principal lecturer in Design Theory & Practice, in the department of Creative Professions and Digital Arts, University of Greenwich, London. Anastasios is also the co-leader of the “Digital Grand Challenge”, a series of research projects that investigates how theory can shape digital practice and vice-versa; as a way to enhance multiple interactions across numerous disciplines, including, Architecture, Arts, Design, Computing, Humanities and other Sciences. His intersubjectivity research project explores design thinking across creative industries and the role it plays within the academic environment.

## **External Facilitators, BDS Creative Ltd**

## **Ghislaine Boddington**

Ghislaine has built up deep expertise in body responsive technologies, immersive experiences and interactive interfaces, directing and producing numerous projects converging body technologies, focused on the fluid blending of the virtual and the physical. Her work crosses over arts, academia, creative industries, public sector and education and she brings together interdisciplinary groupings from these sectors to debate, network and knowledge transfer.

A keen advocate for gender balance, actively enabling equal involvement of women in digital creative industries (Women Shift Digital), in 2014 she was nominated for the Women of the Year Award (Drum/SheSays).

She is a TechCityinsiders100, holds a Research Associateship at Middlesex University and recently presented her “Internet Of Bodies” vision at TEDxLimassol. In 2016 she is a co-curator of Nesta’s FutureFest.

## **Marie Proffit,**

Marie Proffit is body>data>space Development and Marketing Co-ordinator. In this framework, she has been involved in the development and promotion of key EU projects Robots and Avatars and MADE / Mobility for Digital Arts in Europe. She has worked extensively on the development of the unique telepresence/ motion capture commission “me and my shadow” and the “seeing sound” interactive theatre work “RING THE CHANGES+”.

She co-leads Women Shift Digital alongside Creative Director Ghislaine Boddington.

Marie is a project manager with 8 years of experience in curating, developing and promoting projects bringing together creativity, education and innovation in the UK and in Europe. She has a deep interest and expertise in audience development strategies, engaging artists, innovators and the public together through knowledge transfer, co-creation process and digital campaigns.

Plus inputs from

## **Prof Choi-Hong Lai**

The Digital” Grand Challenge co-leader, Professor of Numerical Mathematics, Department of Mathematical Sciences, UoG

## **David Jai-Persad**

Business Development Manager at Greenwich Research and Enterprise, UoG

## **Prof Neil Spiller**

Leader of FACH Grand Challenges

## **Prof Gregory Sporton**

Head of CPDA department

## **Dr Steve Kennedy**

Director of Research CPDA

## **Stacey Pitsillides**

Lecturer in Design

The digital  
grand  
challenge



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*of*  
GREENWICH