CAD optimism

How Architects interested in Media and Computation Talk about Design

Building an Algorithmic Thought in Computational Design

Selena Savić | IXDM | HGK FHNW | selena.savic@fhnw.ch

I present an experimental research into the way computational tools and methods are portrayed within the community of architects, designers, researchers and policy makers. With a background in design and architecture theory, I use Digital Humanities methods to study the discourse and propose some perspectives on the culture of working with computer-aided design tools.

400 000 tweets on #MAB12, #MAB14, #MAB16, #MAB18, #mediaarchitecture term frequency as a wordcloud

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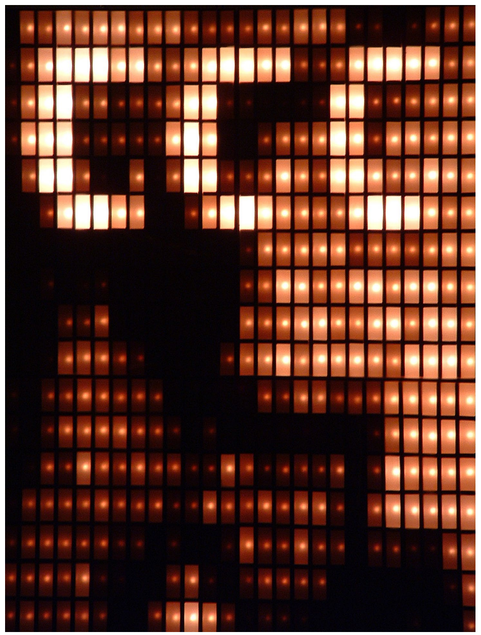
I zoom in on a community of architects, designers and engineers who are interested in Media Architecture. Using social-media research techniques, I select profiles that mentioned, retweeted or liked the hashtags: #MAB12, #MAB14, #MAB16, #MAB18 , #mediaarchitecture, and verified if the account's profile description confirmed an interest in design and architecture, digital placemaking, smart cities and networked spaces. Using this approach, I delimited a community of 250 profiles that talk about the experience of digital infrastructures, smart cities, media facades in public space, and their effects on urban experience. The analysis presented here extends to all tweets posted by the 250 profiles. ‚Great New Design' is a phrase that emerges from simple counting of term frequencies and their presentation as a word cloud.

Impact of Large Scale Integrated Displays on Architecture and Urbanism

Media Architecture Conference, London 2007



CCC Blinkenlights, Berlin 2001

Kunsthaus Graz, BIX, 2003

Galleria Luxury Hall West, UNStudio, Seoul 2003

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Media Architecture community gathers around the interest in technology, considering design of urban interactions as their primary output. It is exploring the Impact of Large Displays and interactive Facade elements on Architecture and Urbanism since its first conference held in London in 2007.

Date: Oct 2, 2021

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Urban Media Territories

initiated by

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international urban screens association

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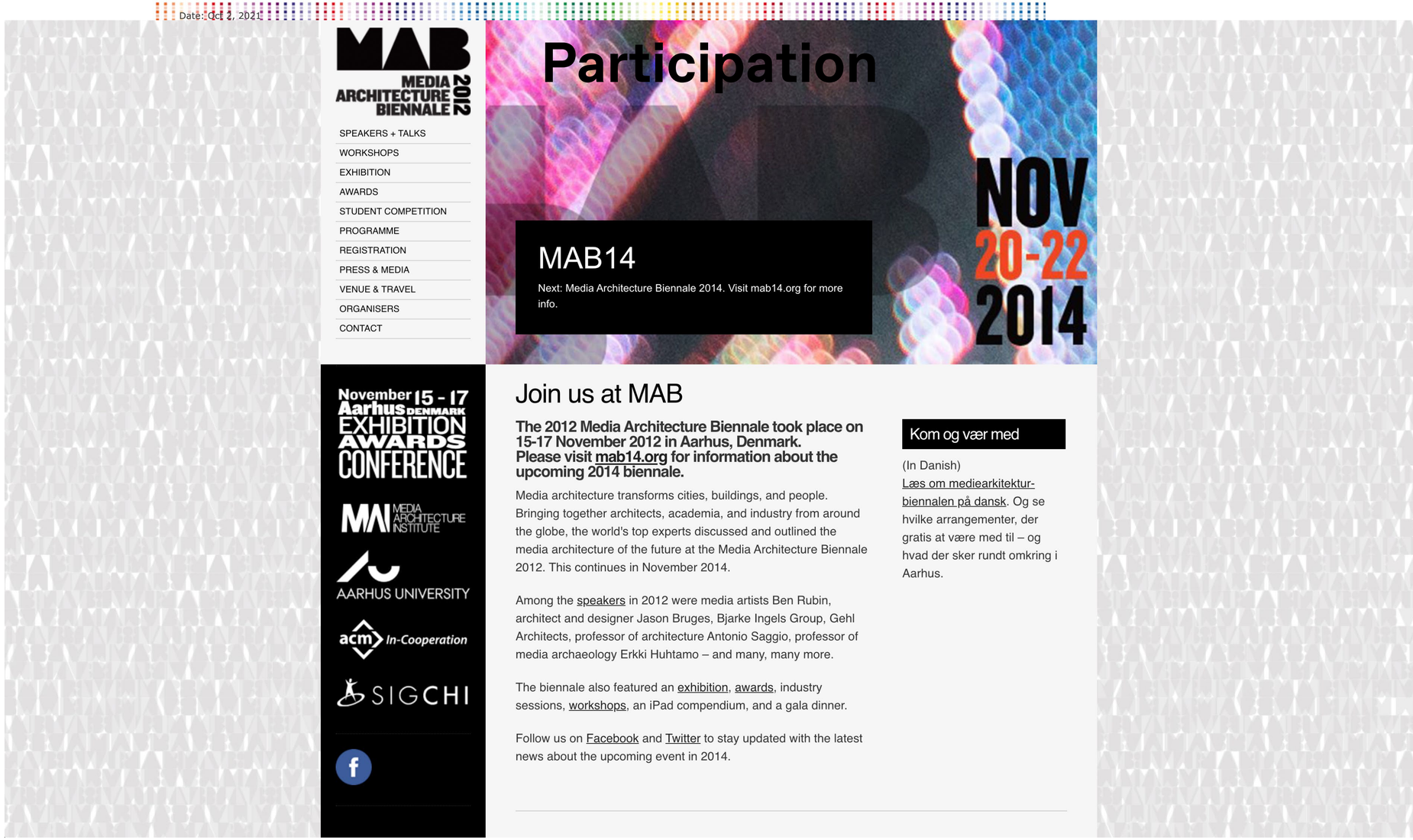
Consequent editions of the Media Architecture Biennale and conference explored the (mythical) potential of Urban Screens; Urban media territories,



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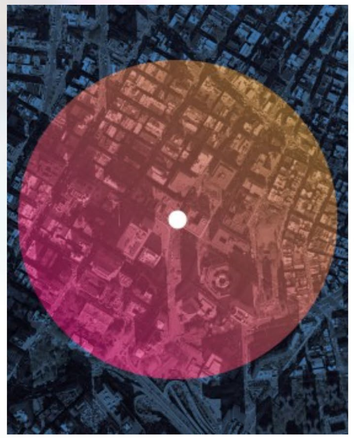
Participation,

Date:: Oct 2, 2021

MAB14

Media Architecture Biennale 2014 : World Cities : Nov 19 – 22

Programme Registration Exhibition Awards Conference Workshops News Venue About Partners



Internet shelters in a smart city

BLOG

How can we explore the contact between the physical and virtual in the urban landscape? How can we find privacy in a world of surveillance? Sébastien Pierre looks for answers.

MAB AWARDS WINNER 🏆 Category: Spatial Media Art PROJECT: LEVENSLICHT | 2020, Netherlands 104,000 luminescent stones remember 104,000 Holocaust victims. awards.mediaarchitecture.org/… pic.twitter.com/lKqaUmSIKJ

About 3 months ago from Media Architecture Biennale #MAB20's Twitter

Speakers

Workshops

Exhibition

Register

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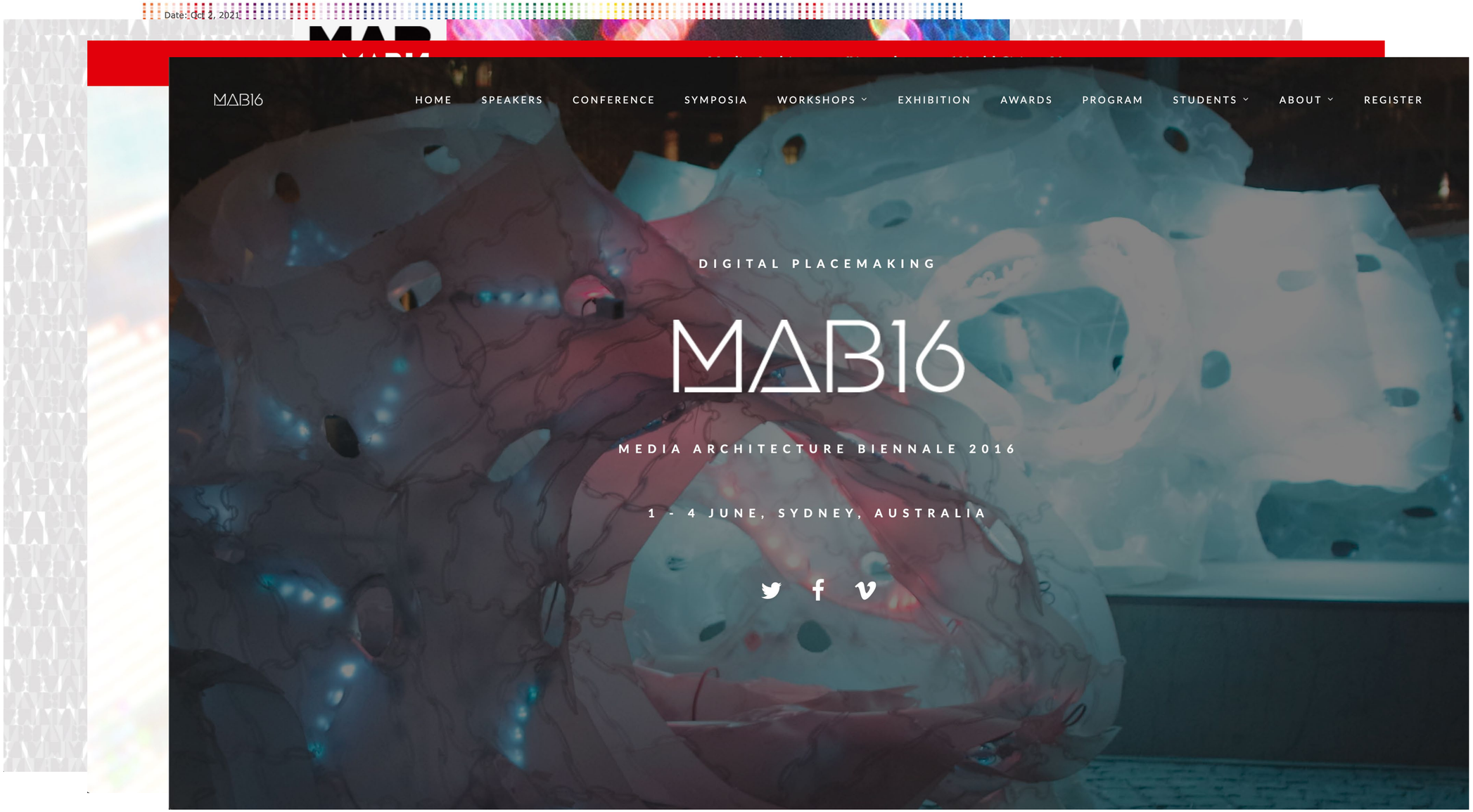

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Digital Placemaking,

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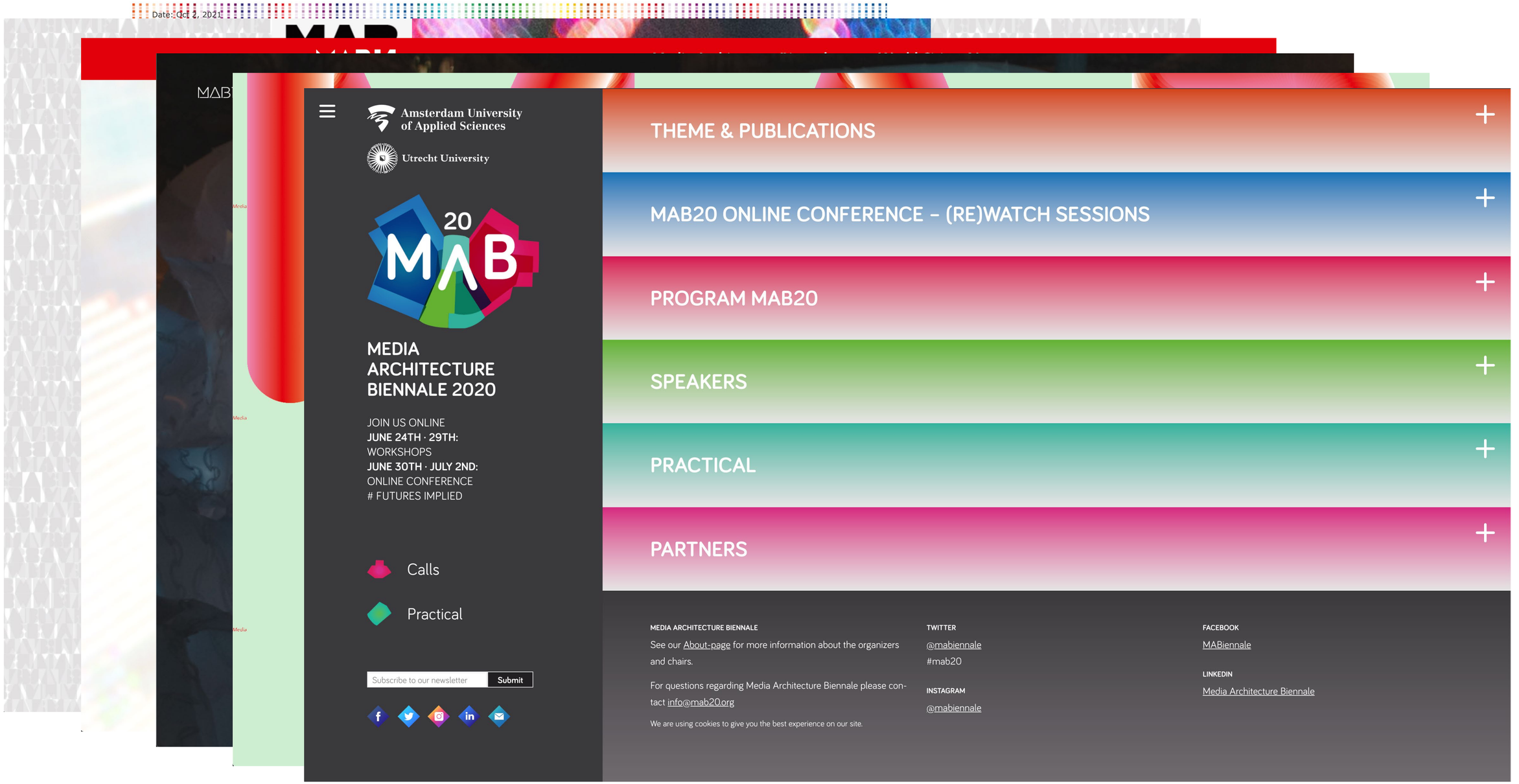
Digital Architecture and Hybrid city,



and Media Architecture and its Futures Implied.

The participants of these events report that they aspire to explore „convergence of interactive media with architecture“ (Brynskov, Dalsgaard, Halskov, 2014).
Media Architecture Biennales are industry oriented events that celebrate the success of producing and placing large-scale sophisticated interactive technologies on building facades and beyond.

Media Architecture in Knowledge and Innovation Districts: Designing a Canvas for Research, Culture and Collaboration

Niels Wouters[1,2], Tim Hunt[3], Olga Dziemidowicz[3], Rose Hiscock[2], Frank Vetere[1]
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[3] ARUP, Melbourne, Australia — {tim.hunt, olga.dziemidowicz}@arup.com

Figure 1: Artist impression of media architecture proposals for *Melbourne Connect*. Each proposal provides distinct engagement opportunities through the physicality of its façade section. Proposals include *Looking@You Looking@Me* (P1, left), *If These Walls Could Talk* (P2, middle) and *The Giving Hand* (P3, right).

ABSTRACT

Emerging economic and demographic trends stimulate universities across the globe to promote better connections with industry, governments and communities. By clustering within Knowledge and Innovation Districts (KID), they are able to respond more quickly to societal and scientific challenges. Architecture is crucial in driving their success by providing spaces that encourage convergence, connectivity and proximity. In this paper, we report on the design process of a media façade for a new KID within *Melbourne Innovation Districts*. We analyze our process through the lens of client and design team, and illustrate how vision and motivation translate into tangible design outcomes. Our insights reveal interesting future directions for media architecture practice and research, by way of (1) its synergies with KIDs, (2) evaluating the success of non-commercial media architecture, and (3) the opportunities for *media architects* as experts that coordinate media architecture projects from conception to delivery.

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https://doi.org/10.1145/3284389.3284492

CCS CONCEPTS

• **Human-centered computing** → HCI theory, concepts and models; • **Applied computing** → *Architecture (buildings)*; *Marketing*;

KEYWORDS

Media architecture, media façade, design process, knowledge and innovation district, lighting design, project management

ACM Reference Format:
Niels Wouters, Tim Hunt, Olga Dziemidowicz, Rose Hiscock, and Frank Vetere. 2018. Media Architecture in Knowledge and Innovation Districts: Designing a Canvas for Research, Culture and Collaboration. In *Proceedings of Media Architecture Biennale (MAB'18).* ACM, New York, NY, USA, 10 pages. https://doi.org/10.1145/3284389.3284492

1 INTRODUCTION

Across the globe academic institutions have always sought partnerships with industry and government to better address scientific questions [15, 32]. These partnerships provide opportunities to collectively stimulate technological and economic development and to measure market response to outputs of academic research [8]. While partners often used to be geographically dispersed, today we witness the growing emergence of *Knowledge and Innovation Districts* (KID). They enable partners to physically cluster in close proximity and as a result, to leverage improved networking opportunities between academia, industry, government and adjacent communities, such as start-ups, incubators, accelerators, makerspaces and

A typical article published in proceedings of the MAB conference

The conference proceedings are Published by the Association for Computer machinery, or ACM, since 2012 in the Computer Science format, but suggesting a 'fun' artistic quality of results and content. The authors partly overlap with Human-Computer interaction field, which is similarly industry oriented and computationally savvy.

Media Architecture in
Designing a Canvas fo

Niels Wouters[1,2], Tim Hunt
[1] School of Computing and
{niels.w
[2] Science Gallery, Melbourn
[3] ARUP, Melbourne, A

P1

P2

Figure 1: Artist impression of media archi
engagement opportunities through the physi
left), *If These Walls Co*

ABSTRACT

Emerging economic and demographic trends stimula
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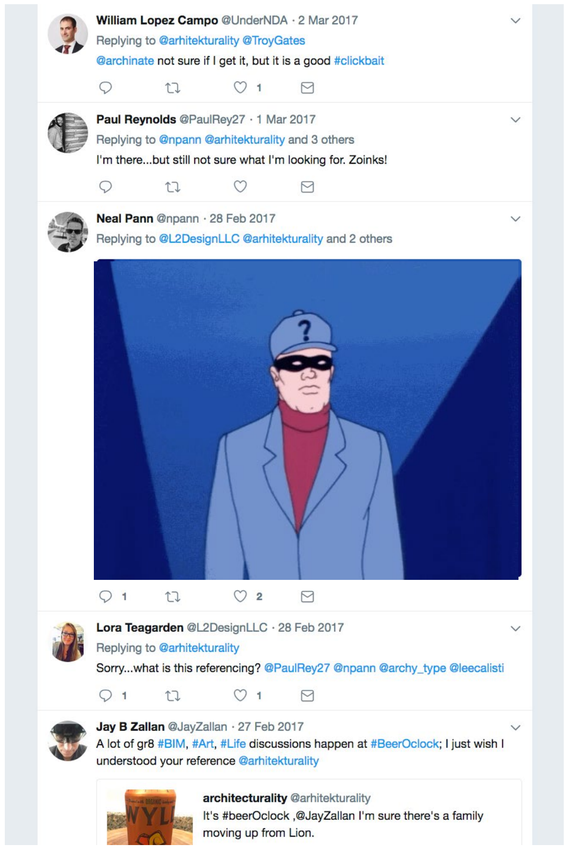
The volume of publications - less than 15 articles every two years is complemented by the publication and updating of the Media Architecture Compendium, an effort of the Media Architecture Institute operating between Vienna and Sydney.



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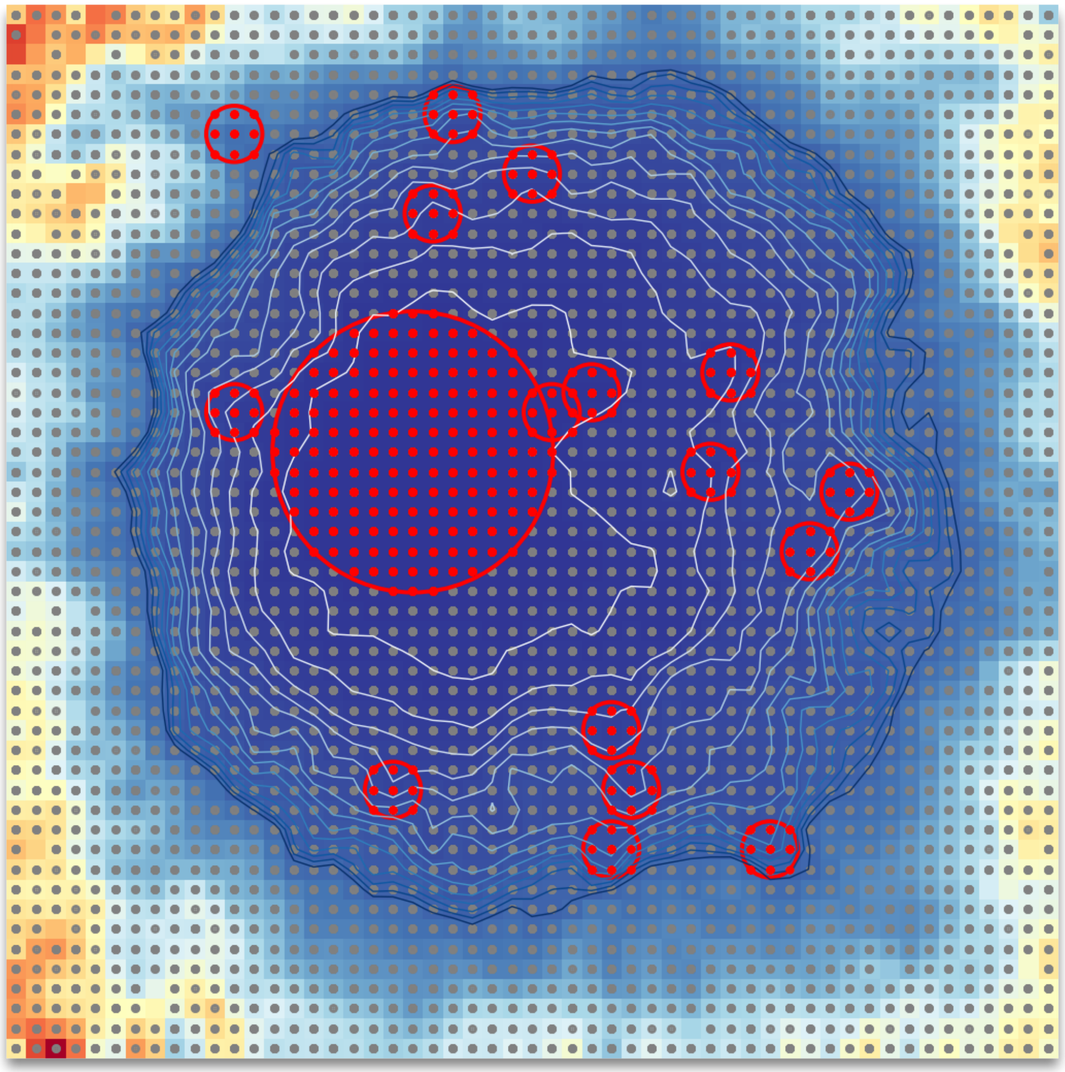
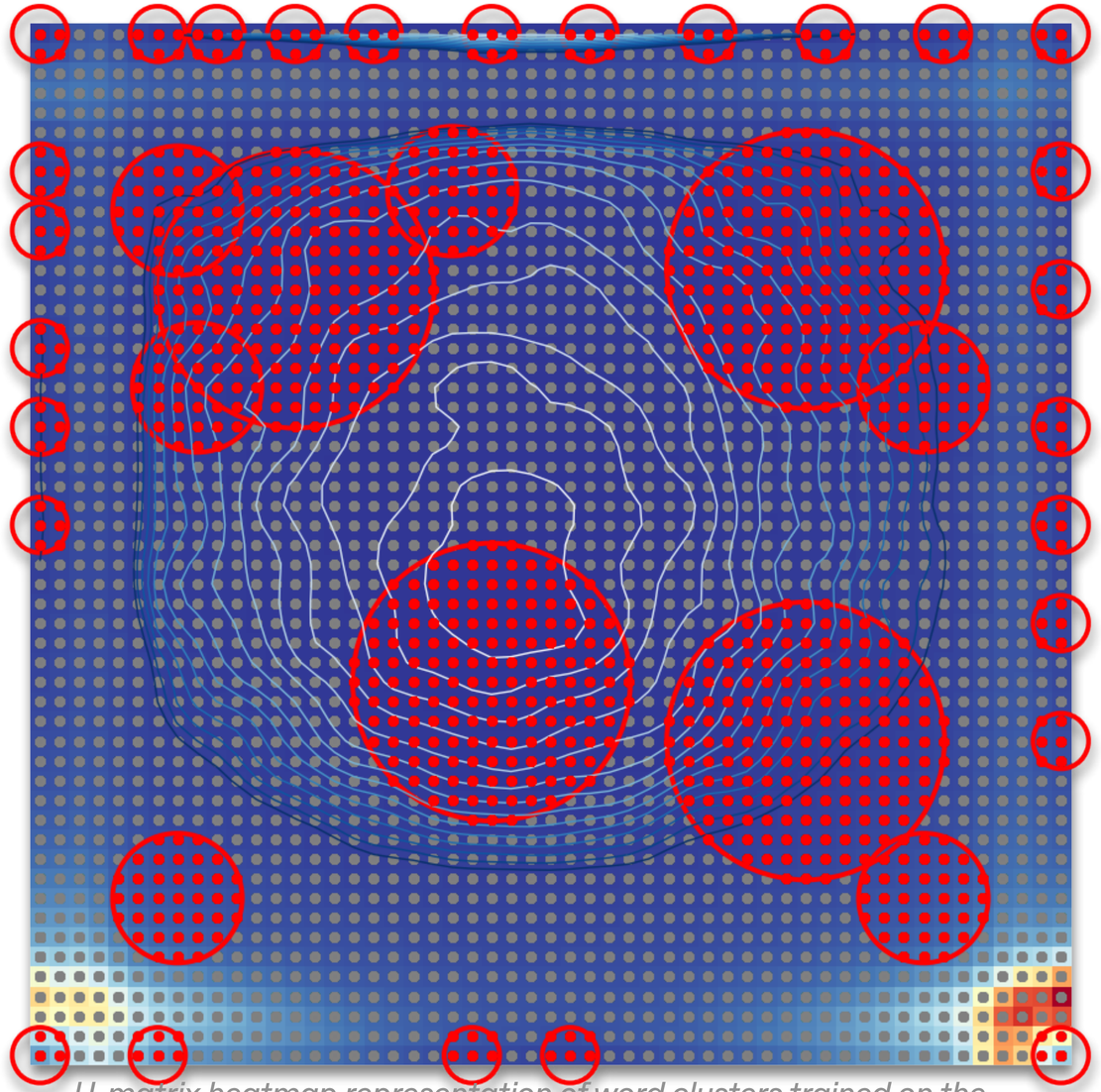
How is Media Architecture discussed on Twitter? In social media, we communicate through pictures, videos, animated gifs, short codes, links, incomplete sentences, references to other things. It is a rich, and digitally documented communication channel, simultaneously accessible to analysis. These channels are driven by algorithms as organisers of discourse, mostly with the goal of channeling attention. I approach Twitter feeds as documented and accessible artifacts of conversations that speak about interests, topics and aspirations of the community. Next to identifying the character and structure of discourse among designers, architects, practitioners and academics, I am interested in the shadow presence of industrial players narratives that drive the industry and application-oriented field of media architecture.



U-matrix heatmap representation of word clusters trained on the word2vec model of tweets related to Media Architecture



U-matrix heatmap representation of word clusters trained on the doc2vec model of tweets related to Media Architecture

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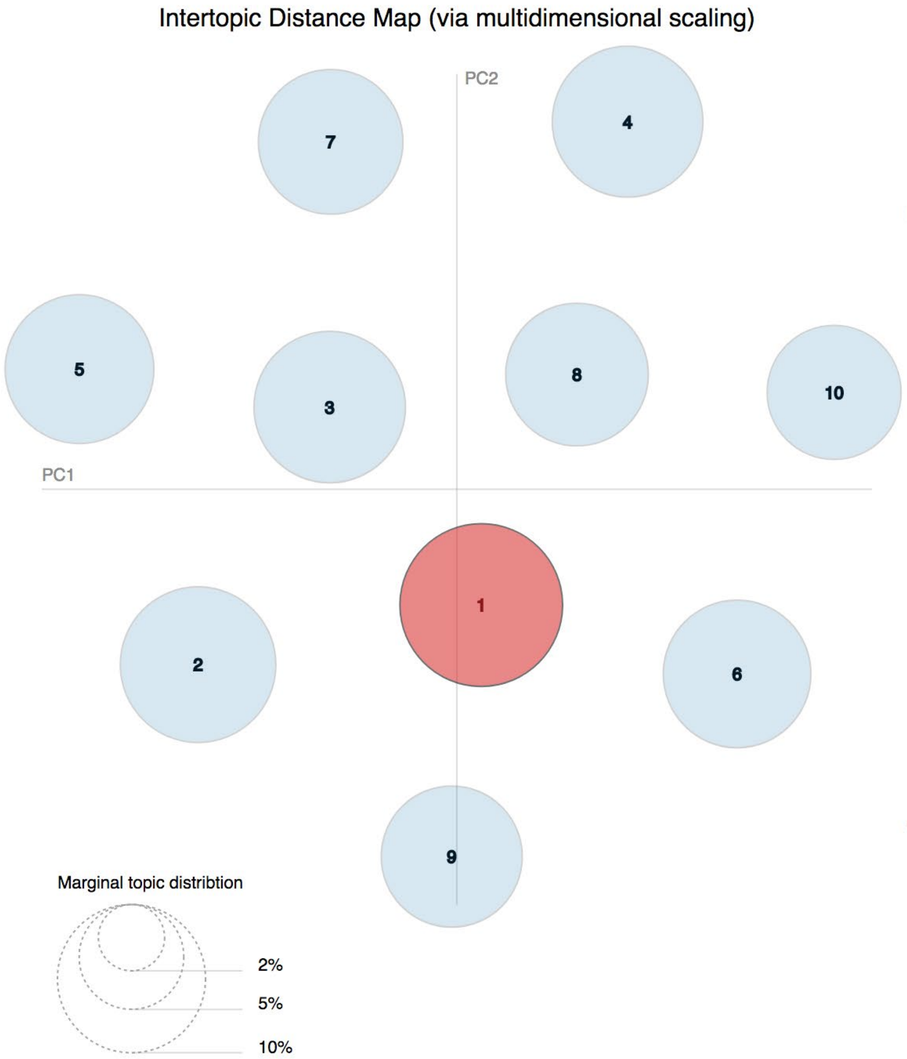
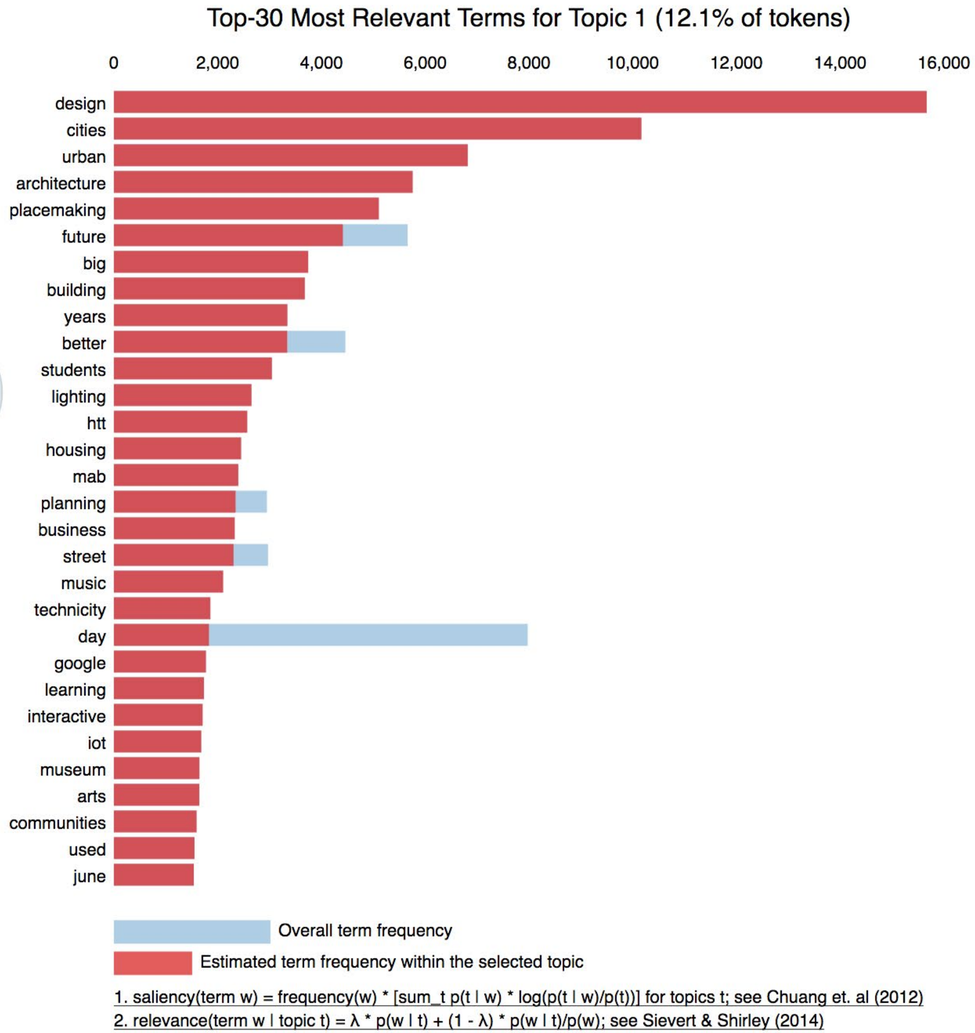
I processed the collection of tweets with two machine learning algorithms, namely the self-organizing map (SOM) for data clustering and Latent-Dirichlet Allocation (LDA) for topic detection. The Self-organizing map (SOM) machine learning algorithm is interesting for computational experiments in this project because of its' capacity to detect patterns in unlabelled data and facilitate an explorative approach. Data points (groups of words or tweets) with similar features are mapped close together, resulting in clusters. When applied to the corpus of Media-Architecture related tweets, this process reveals a structure of concentric circles, spreading outwards from the centre. Homogenity of discourse - topics and terms circulating around one central theme, is a strong feature in the social media discourse on Media Architecture.





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What topic might it be? To better understand the topics that are representative of the discourse, I applied a topic modeling algorithm and identified ten prominent topics determined by lists of keywords. You can see here how one such topic can be described. I call this topic: ‘Future city making’; described by keywords listed in the graph above. The other nine topics include: Placemaking and education, Arts, culture and digital technologies, Future urban living, Project management, Future health and trust, Near future living – tech and place, Architecture and innovation, Machine learning, AI and design, Feelings for community

placemaking

participation

future

innovation

emotion

community

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One important thread that remains visible across these different word-counting and keyword grouping attempts is the ‚optimism‘ or lack of criticality towards issued that the Media Architecture engages with. Sure enough, it is probable that many other specialized, professional discourses would render similar results in terms of discourse homogeneity and future-orientation. Still, I want to emphasize here the problem of addressing socio-political topics such as ‚Placemaking‘ and ‘Participation’ without deeper reflection on entanglements with non-technical systems outside of the scope of design and engineering work. I will discuss here Placemaking and Participation in a little more depth, as prominent concepts that describe this problem.

placemaking

participation

re

innovation

on

community

Play and placemaking in urban art environments

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Abstract

Links between play, placemaking and public space are explored in the design and development of 'urban art environments'. This approach to media architecture is articulated via examples of interaction design in recent urban art projects.

Keywords: play, mixed realities, urban space, public art, media architecture

Index Terms: [Human-centred computing]: Interaction Paradigms—Mixed/augmented reality; [Applied computing]: Arts and humanities—Media arts

1 Introduction

Play in public space can create opportunities for placemaking in urban art. Pervasive games [14] that use mixed and augmented realities (MAR) [15] alter public space by embedding media into urban environments. Other forms of public play rely on social systems and rules, agreed upon through conversation with players or gamemasters. Rather than present 'reality as-it-is', play offers the opportunity to explore 'reality as-it-could-be'. Building on precursors such as the flâneur, situationist derive [2], and playground [1] imaginative and poetic possibilities of urban adventure through play have emerged that present 'reality as-it-could-be'. This paper will explore how play creates new poetic possibilities for play in urban space through exploration of a series of works developed by the author using the framework of 'urban art environment'.

Huizinga [8] identifies play as a productive force, asserting that 'play precedes culture'. Play becomes a mode of exploring the potential of an urban culture – its affordances, rules, systems, limits, assumptions and codes. To explore this further three concepts are explored in the context of play. First of all, de Landa's 'meshworks' [4], in particular the ways in which abstract machines interact to produce media landscapes that may be understood as complex adaptive systems. These structures are compared to Parikka's 'media ecologies' [17] that explore the diversity of material forces at play, thereby introducing the idea of multiple entities having agency in the process, as articulated in Harman's speculative realism [7] where he introduces the 'quadruple object' to consider the many forms of non-anthropocentric agency at work in the world. These three ideas articulate a world characterised by multiplicity across diverse layers – or strata – of MAR.

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The paper introduces three concepts that connect play and placemaking in cities: the urban art environment, a constructed playground in urban space; mixed realities and urban art, the framing of the city as a playground; and the playful citizen, reframing the relationship of the player to the city. As a short positioning paper these ideas are introduced and illustrated through examples of urban art projects, laying the groundwork for further research and exploration.

2 Urban Art Environments

In an urban art environment there is no single, central form or point of focus. Urban art is distributed throughout the space and is integrated within its landscape design, architecture, and urban planning. Tangible forms of interaction are a common feature, often traversing multiple layers of civic space: micro and macro, monumental and intimate, transient and permanent, personal and public, individual and collective. Using the model of the playground, interaction with the media architecture of the site allows exploration of its logic and systems, and to be embedded in its language.

As background for the investigation of pervasive game design in recent public art projects that explore the nature of urban space on a citywide scale, two site-specific projects are explored as examples of urban art environments. Their media architecture consists of sculptural elements, light, sound, and play situated in public space. These works address the public by embedding them in the experience of place, and allowing them to engage with both the metaphor and the actual act of play in urban space.

Typically, in an urban art environment, forms are multivalent and operate differently on each strata of the mixed reality. By way of example, viewing the work at a distance is a distinctly different experience than traversing the space of the work, which in turn is different from engaging in play with its rules and systems. The public artwork is not a single object but a meshwork distributed across its environment, relying on media ecologies to activate its engagement with different layers of that space.

Figure 1: Field of Play, Melbourne Docklands 2006.

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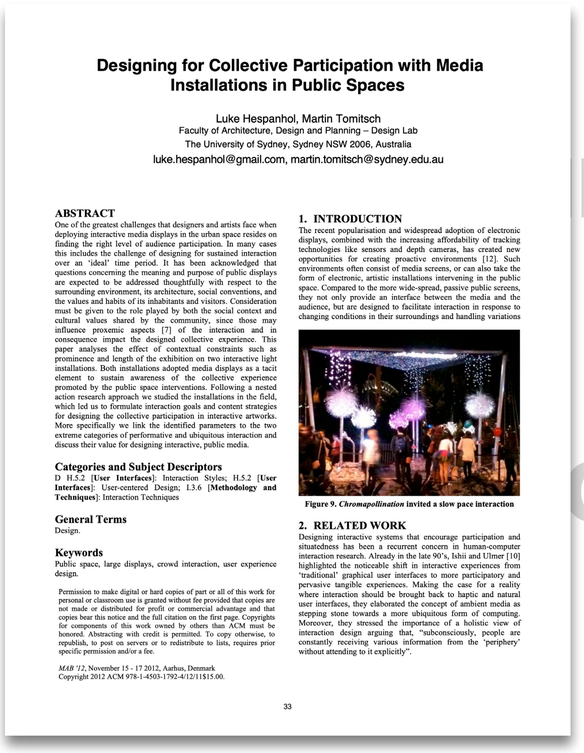
Placemaking and city-making emerge as an important keyword in my empirical data on social media discourse, and it features prominently in titles of articles published in context of Media Architecture. Despite the interest in notions of social and shared, the media architecture community rarely theorizes the concept of placemaking or discusses it critically. The authors are aware of and even inspired by critical work on the use and subversion of urban space, such as in the work of Situationists in Paris and the uptake of Homo Ludens culture theory. Still, sociological takes on the social construction of space receive little to no attention, and the construction of place is delegated to technology. ‚Placemaking' is taken at face-value, as a measure of the capacity of media facades to bring character to locations not taking into account other things that contribute to that character, and rarely discussing its negative sides such as light pollution (with some notable exceptions).

placemaking

participation



Designing for Collective Participation with Media Installations in Public Spaces

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ABSTRACT
One of the greatest challenges that designers and artists face when deploying interactive media displays in the urban space resides on finding the right level of audience participation. In many cases this includes the challenge of designing for sustained interaction over an 'ideal' time period. It has been acknowledged that questions concerning the meaning and purpose of public displays are expected to be addressed thoughtfully with respect to the surrounding environment, its architecture, social conventions, and the values and habits of its inhabitants and visitors. Consideration must be given to the role played by both the social context and cultural values shared by the community, since those may influence proxemic aspects [7] of the interaction and in consequence impact the designed collective experience. This paper analyses the effect of contextual constraints such as prominence and length of the exhibition on two interactive light installations. Both installations adopted media displays as a tacit element to sustain awareness of the collective experience promoted by the public space interventions. Following a nested action research approach we studied the installations in the field, which led us to formulate interaction goals and content strategies for designing the collective participation in interactive artworks. More specifically we link the identified parameters to the two extreme categories of performative and ubiquitous interaction and discuss their value for designing interactive, public media.

Categories and Subject Descriptors
D H.5.2 [**User Interfaces**]: Interaction Styles; H.5.2 [**User Interfaces**]: User-centered Design; I.3.6 [**Methodology and Techniques**]: Interaction Techniques

General Terms
Design.

Keywords
Public space, large displays, crowd interaction, user experience design.

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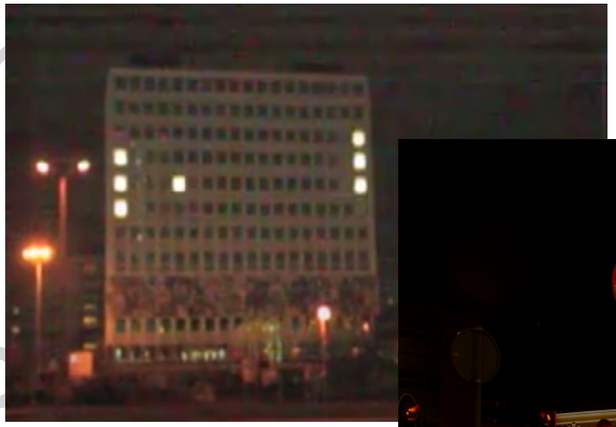
1. INTRODUCTION
The recent popularisation and widespread adoption of electronic displays, combined with the increasing affordability of tracking technologies like sensors and depth cameras, has created new opportunities for creating proactive environments [12]. Such environments often consist of media screens, or can also take the form of electronic, artistic installations intervening in the public space. Compared to the more wide-spread, passive public screens, they not only provide an interface between the media and the audience, but are designed to facilitate interaction in response to changing conditions in their surroundings and handling variations

Figure 9. *Chromapollination* invited a slow pace interaction

2. RELATED WORK
Designing interactive systems that encourage participation and situatedness has been a recurrent concern in human-computer interaction research. Already in the late 90's, Ishii and Ulmer [10] highlighted the noticeable shift in interactive experiences from 'traditional' graphical user interfaces to more participatory and pervasive tangible experiences. Making the case for a reality where interaction should be brought back to haptic and natural user interfaces, they elaborated the concept of ambient media as stepping stone towards a more ubiquitous form of computing. Moreover, they stressed the importance of a holistic view of interaction design arguing that, "subconsciously, people are constantly receiving various information from the 'periphery' without attending to it explicitly".



commu

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‚Participation' is understood as the capacity for mediation, inherently linked to capacity of systems to respond to inputs from their users. Such a cybernetic understanding of governance was explored in early design of computational systems: directly linking the capacity of systems to receive inputs to their capacity to deliver outputs aligned with majority's will. A famous example is Stafford Beer's design for Chilean decision support system called Project CyberSyn. In Media Architecture terms, the interactivity of facades becomes directly the measure of engagement and therefore enabling of citizen's inclusion in the design - or at least STATE of urban areas. Media facades have been used 1) to play games (Pong in Berlin); 2) to display ‚emotional' states of citizens (D-Tower in Doetinchem, NL), and event 3) to vote on urgent urban challenges in their city concerning the environment, 2) mobility, 3) security, 4) public space and 5) housing) (SCSD project in Avenida Paulista business district in Sao Paolo, Brazil)

optimism <-> optimisation

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Media architecture is presented as mediator of the public, as inclusive technology for more participative decision making. And while a dynamic facade does increase the possibilities for individual or group expression, it seems to also turn attention away from really political issues and frame participation as a technical problems. Critical discourse on the so-called ‘smartness mandate’ is largely ignored. Even more so, an intersectional perspective on modes and logic of exclusion due to technical or physical accessibility of such platforms is missing.

optimism <-> optimisation

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The optimism I observe as a general trait of the discourse might speak of an optimization strategy for political involvement of well-off citizens of globalized cities. The tendency to have a hopeful view on things is perhaps justified by the future orientation of such applications. However, large media displays do more effective work in redressing public opinion, than in capturing real citizens emotions or opinions. The optimism I observe towards questions of participation and placemaking can do the work of side tracking the discussion on power relations inherent in interactive technologies, as well as cities at large.

brands, logos, #s

Building an Algorithmic Thought in Computational Design

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Going forward, I plan to engage more precisely with the concepts that pertain to social, political, and racial entanglements within the practice of media architecture design and engineering; You could observe that there are no brands or company names related to the industry among keywords that I discussed. We could have expected to see ‘Autodesk’ or ‘Revit’ more prominently. This is due to their exclusive use as # hashtags, attractor that work to bring interest to common working methods. I plan to trace more precisely the relation of industrial players names, titles to the way participation and placemaking (along with other important terms) are understood.