Abstracts

AI and Creativity

Pei-Sze Chow: Algorithms in Film Production: Should A.I. Decide What Films Are Made?

New tech companies such as Cinelytic, and Largo.ai are now providing Hollywood and European film companies with AI-powered solutions that will enable producers and studios to make data- supported decisions about which screenplays to green-light. Their machine learning (ML) algorithms assess the novelty and creativity of a film idea, breaks down a screenplay into its constituent data points, and revisualises the project in terms of a dashboard of metrics including character profiles and likeability, target audience, and predicted box office earnings, among others. Such platforms ultimately offer a recommendation to green-light a project or not. Industry and marketing discourses surrounding these new platforms position them as co-creators within a post-humanist understanding of creativity (Zylinska 2020).

Drawing from the analytical framework of the 'Lovelace Effect' as proposed by Natalie and Henrickson (2021), which emphasises the discursive and material ways that the behaviour of computing systems is perceived by users to be original and creative, I take a relational materialist (Pajkovic 2021) approach to examine how the decision-support tools increasingly being used in the film business are framed to appear intelligent, reliable, and capable of producing creative insights that are useful to users and observers in the film industry. It is through representational and technical means where film practitioners, company founders, and institutional structures like film festivals, industry conferences, and press media attribute efficient and bias-free creativity to these tools. I also examine the claim that these tools are also framed as *enhancing* creativity and argue that this is questionable insofar as such utterances obscure the fact that a significant degree of human labour is being automated. This paper argues for the necessity of film and media scholars to engage critically with the potential impacts that might arise from a non-critical reliance on such technologies in the pre-production stage to determine the viability of film projects.

References

Natale, Simone, and Leah Henrickson. 2022. "The Lovelace Effect: Perceptions of Creativity in Machines." *New Media & Society*. doi.org/10.1177/14614448221077278. ;

Pajkovic, Niko. 2022. "Algorithms and Taste-Making: Exposing the Netflix Recommender System's Operational Logics." *Convergence* 28, no. 1: 214–35. doi.org 10.1177/13548565211014464.

Zylinska, Joanna. 2020. *AI Art: Machine Visions and Warped Dreams*. London: Open Humanities Press.

Biography

Pei-Sze Chow is Assistant Professor of Media and Culture at the University of Amsterdam's Department of Media Studies and a member of the Amsterdam School for Cultural Analysis (ASCA). She co-directs the ASCA research group *AI and Cultural Production* and has published and given talks in London, Hong Kong, and Singapore on the emergence of AI tools used in film production.

Nicola Bozzi: RISE OF THE META—SELF / Face Capture, AR & Platform Art Practices on Social Media

This presentation discusses the emergent format of AR face filters and its implications in terms of the performance of the digital self and the definition of AI-driven art on social media. In particular, I will focus on the convergence of two Facebook-owned platforms: Instagram (where filters are mostly shared) and Spark AR (where they are created).

Face filters are important because they constitute a key area of negotiation between users and digital subjects (Goriunova, 2019), but they also represent a critical strategic element within corporate investment in facial recognition, AI and AR, such as Facebook's recent rebranding as Meta.

The establishment of such an immersive socio-technical environment is worthy of critical inquiry for two reasons. The first is sociological: platforms like Facebook and Instagram are known to commodify user identities in several ways (Lim, 2020) and negatively impact self- image, especially for young women (Gayle, 2021); more generally, corporate platforms have a notoriously prescriptive attitude, pushing participatory 'engagement' as normative social behaviour (Docherty, 2020). The second reason is cultural: platforms promote AI and AR applications as creative and even artistic tools, with Facebook explicitly framing filter creators as artists and collaborating with institutions like Tate Modern. While much of so- called "AI art" is developed alongside big tech companies and is effectively already "platform art" (Zylinska, 2020), it remains crucial to investigate the everyday and artistic aestheticization of these technologies at the intersection of their strategic corporate promotion and potential socio-cultural impact.

How is the socio-technical environment delineated through the convergence of AI and AR shaping the development of facial capture as a mediation of the self?

What type of new cultural forms emerge from face capture-powered platform art, and how are these tools used critically?

My presentation will try to suggest answers to these questions by combining interface and cultural critique.

Biography

Nicola Bozzi is a lecturer at King's College London. His main research interests are globalized identities and the role of art in society. He also has a newsletter about comedy, media, and culture titled Letdown Comedy. You can follow him on Twitter as @schizocities

Imen EL BEDOUI: Artificial Visual Perception revisited through contemporary artworks

Visual perception as a complex phenomenon intrigues us to reveal the secret behind our understanding of the material world, toward things around us. artworks in visual arts are unique site of experimentation where we could explore the" visual perception". In fact, it is about the way to conceive and to understand the ontological status of object in front of us, whether an artwork or an everyday object. It's seems a challenging issue between visual arts and the perception as a complex phenomenon when it concerns artificial visual perception. In this sense perception took up a new perspective when it concern artificial field.

With the rise of new technology and it's connection with artificial intelligence , contemporary artists are investing in this area with the variety of artistic experiences where digital, artificial and virtual reality are the main concern.

It seems important to question the intertwined relationship between visual perception and artificial intelligence in the context of contemporary art projects. How artists explore "artificial "as a field of investigation in visual perception? How "artificial" could affect our perception toward things and among artworks? In which way artworks could explore new territory about the artificial visual perception?

This paper aim to discuss through an analytical approach of contemporary artworks that invest in artificial intelligence in order to decipher the connection between the issues of visual perception and artificial one. Our paper suggests at first place that the common link between us and world is the sense of visual perception conceived as a powerful bridge between us and the world. In this meaning, we will try to trace a possible genealogy of the elements between visual perception and visual arts as an experimental area.

Key words: Artificial Intelligence, contemporary art, aesthetic, visual perception

Biography

Imen EL BEDOUI, Doctor in Sciences and Arts Techniques and Assistant Professor at Higher institute of Kasserine at University Of Kairouan since 2017, a member of Experience Research Society Finland, my research area include Bio Art and Aesthetics and Ethics issues and the question of limit.

Carlo Forlivesi: If creativity does / doesn't please the algorithm

I will talk about the role of creativity and its interpretation/misinterpretation and reception in a time strongly influenced by the "sortilege" of the Artificial Intelligence. How much AI emulates the "world of humans" and is orientated by their knowledge, mindset, history, output and behaviour? And viceversa, on which extent our technological addiction could evolve into a psychological and formal addiction?

I also aim to discuss the received idea of "nature of feelings" which stands in contrast to the AI presumed insensitivity. Qualitative characters of sensation and their anthropocentric implications such as qualia and human perception, win over the unknowable to us, noumenal entities and haecceitas (Ding an sich).

Last, I will focus on the "king of feeling": Music, specifically the composition of music. Music involves implementing a wealth of knowledge and skills including technique, craftsmanship, mathematics, auditory analysis and representation, historical awareness, abstraction from the present and intuition about the future... and much more. Notwithstanding this evidence, industry at different levels is powerfully governing the arts equalising them to the effects of algorithmic logics and big data.

Biography
Composer, organist, educator and researcher Carlo Forlivesi was born in Faenza (1971, Italy), near Bologna, and pursued studies throughout the 1980's and 1990's in the cities of Bologna, Milan and Rome, Paris, and Barcelona. In the realm of electroacoustic music, he has worked in Paris at IRCAM, INA-GRM (Radio France), and its Danish equivalent DIEM. His main pursuit in the years following, was traditional Japanese music and dance, including the ethnic music of the Ainu, which he has subsequently researched and practised while joining the faculty at the Tokyo Music College, the Kyoto City University of Arts, and Northwestern University. He has received a number of international academic awards (Japanese Ministry of Culture, Rohm Music Foundation, Danish Rectors' Conference, Fulbright etc.), composition prizes and commissions (Yamaha Music Foundation, Huub Kerstens Prize at Gaudeamus, Gran Teatro La Fenice of Venice, etc.), contributing significantly to his success as one of the most interesting and appreciated artists of his generation. Over three decades, he has lectured extensively throughout four continents and pursued contrasting musical directions, composing for a fascinating diversity of ensembles, orchestras and choirs, across an impressive range of genres. He has been a Professor at the University of Sapporo, at the Hochschule für Musik und Darstellende Kunst Stuttgart, and at the State Conservatory "Gioacchino Rossini" of Pesaro.

Jan Løhmann Stephensen: The case of Duchamp in Artificial Creativity

In the first chapter entitled "Even an AI could do that" in Emanuelle Arielli & Lev Manovich's book *Artificial Aesthetics: A Critical Guide to AI, Media and Design* (2021-22), which is currently being published chapter by chapter on the latter's homepage, Arielli notes that while some kinds of artworks with more traditional or classical characteristics seem particularly straightforward to (re-)produce for an AI, the oeuvre of Marcel Duchamp on the contrary poses a certain set of perhaps unresolvable problems. Taking its critical que from this proposition, the present paper will first discus how this on some levels might make good sense, whilst on others *not*—and what this tells us about how the project of artificial creativity and artificial art making currently is being perceived and pursued. With reference to Thierry de Duve (1996), Juliane Rebentisch (2013) and Andreas Reckwitz (2017), the primary argument will thus be that it is not, as Arielli claims, the heterogeneity of the oeuvre on the formalistic level, which would make Duchamp a tough case (leaving the AI with a very diffuse set of data to learn from). The problems would rather stem from the more fundamental philosophical, sociological and institutional issues that his oeuvre seminally raised concerning questions such as "what is art?", and "what is creativity?" Building on this, I will next argue that artificial creativity/art-making does in fact raise a set of quite "Duchampian" question and speculate whether the project of forging an artificial creativity/art isn't in fact fundamentally dependent upon the historical contribution of Marcel Duchamp (and/or those critics and academics who over the years have interpreted his oeuvre as dealing specifically with these issues).

Bio:

Jan Løhmann Stephensen is an associate professor at Dept. Of Aesthetics & Culture at Aarhus University. His research interests are cultures and practices of participation, democracy and the public sphere, creativity and its diffusion into non-art related spheres like work life, economics, policy-making, university research agendas, new media technologies, etc. He is co-editor and founder of *Conjunctions — Transdisciplinary Journal of Cultural Participation*.

AI and Visual Culture

Mette-Marie Zacher Sørensen: Deepfake Animations of Dead People

In 2021 the Mexican Journalist Javier Valdez was shot. Afterwards a video was released of him saying: "I am not afraid because you cannot kill me twice". In this paper I aim to analyse the ethics of deepfake animations. 'Deepfakes' is the popular word term for *faked* videos(synthetic audiovisual media productions) produced by using *deep* learning techniques. What interests me in particular in this context is the ethics of the implied subjects in an AI animation. Traditional Image Theory has seldom addressed the actual affect of depicted bodies (Berger, 1972), but along with the proliferation of selfies on social networks (where the sender is the subject) ((Tiidenberg and Gómez-Cruz, 2015), deepfakes bring to our attention, in a darker way, the way in which bodies in a moving image not only affect, but are also affected.

Biography

Mette-Marie Zacher Sørensen is associate professor in Aesthetics and Culture at Aarhus University, Denmark.

Amanda Wasielewski: Unnatural Images: On AI-Generated "Photographs"

In artificial intelligence (AI) and computer vision research, photographic images are typically referred to as "natural" images. This means that images used for automated categorization and recognition tasks are conceptualized within a binary as either natural or synthetic. Recent advances in creative AI technology, particular generative adversarial networks (GANs) have afforded the ability to create photographic-seeming images, i.e., natural images, which are created based on learnings from vast databases of digital photographs. Contemporary discussions of these images, popularized in the media and on the website thispersondoesnotexist.com, have thus far revolved around the political and social implications of producing convincing "fake" photographs of people who do not exist. However, these images are of theoretical interest for the fields of art history and visual studies for additional reasons. The history and theory of photography has often centered on the relationship between photography and nature, its status within fine art, its indexical quality, its relationship to memory, and its documentary mode. GAN-created natural images both resonate with and oppose the formal readings of photography in these ways. This paper addresses these images from an art historical perspective and asks: can these images be considered photographs? If so, what are the implications for the field when photographic images are thus divorced from the mechanical process of lens, camera, and light hitting a reactive surface or sensor?

Biography

Amanda Wasielewski is Docent in Art History at Stockholm University. She is currently part of the Metadata Culture project Sharing the Visual Heritage, focusing on the impact of digital tools in art historical scholarship and collections. Wasielewski is the author of three monographs: *Made in Brooklyn: Artists, Hipsters, Makers, Gentrifiers* (Zero, 2018), *From City Space to Cyberspace: Art, Squatting, and Internet Culture in the Netherlands* (Amsterdam University Press, 2021), and *Computational Formalism: Art History and Machine Learning* (MIT Press, forthcoming).

Asker Bryld Staunæs: Artificial Imagination in Grégory Chatonsky: AI image aesthetics, autonomies and possibilities

In this presentation, I will outline a strategy for a more consistent, imaginary and investigative art for AI. I will do this by interpreting Grégory Chatonsky's project of "artificial imagination", which he has since 2018 developed through AI images and short blog posts. I will characterise the AI art scene through two themes derived from Chatonsky: 1) that project's for machinic autonomy recuperates artistic autonomy, and 2) that the aesthetic question of AI imagery lies in-between autonomy and possibility.

As an artist-researcher, I find Chatonsky's contribution to be important, because he has formulated a rare *aesthetic* critique on the development of AI images through a methodology that he calls *recherche-création*.For Chatonsky, new models such as *DALL-E 2* are devolving the field into banality, boredom and kitsch due to a computer scientist aesthetic of 'realism' or 'naturalism'. However, as this aesthetics is built *on top of* a condensed representation of recorded visual culture, there is a spectrum of possibility for re- assembling AI's *aesthetic* and *cultural* values. Here, theory is swiftly converted into practice, as one can easily recognise how a specific aesthetics renders recorded visual culture, and as one is continuously in need of *fine tuning* for ascertaining whether images reveal inclinations of data (*culture*) or programming (*aesthetics*).

As AI image technologies are increasingly subject to a constant flux of methods, it becomes necessary to develop fundamental strategies. This is especially so when one compares Chatonsky to the contemporary movement of *neuralism* (e.g. Kogan's *Abraham,* 2019, or Klingemann's *Botto,* 2021) that seeks to "summon" an *artificial autonomous artist* (Rouviere 2017). Through Chatonsky's critique, I will argue that these signify a generalized "artificial idiocy" (Bratton 2015) that can only "ejaculate onto the walls of the universe" in the manner of Alfred Jarry's painting machine *Clinamen* from *Dr. Faustroll* (1911).

Artist-researcher: MindFuture.ai, Spanien19c

Daniel Chavez Heras: Computational Ekphrasis: On the Aesthetic Possibilities of Describing Images into Existence

In this paper I explore some of the most salient aesthetic possibilities enabled by recent large- scale computational models designed to link images and natural language, through the philosophical concept of *ekphrasis*.

Some of the most significant developments in applied machine learning research come from general large multi-modal systems that can take text descriptions as inputs and produce matching images as outputs. Systems such as DALL·E 2 (Ramesh et al., 2022) , Image (Saharia et al., 2022) , and Flamingo (Alayrac et al., 2022) , all released within weeks of each other between April and May 2022. In the first part, I give a technical overview for non- technical people of the type of technology that underpins these systems, touching on the processes of tokenisation and vectorisation that allow multimodal learning, and the difussion mechanism used to generate images from text prompts. I also give an account of how these models are currently being used by a growing community of practice in creative domains.

In the second part I turn to *ekphrasis*, originally a poetic device and literary genre in classic rhetoric, but whose broader meaning in contemporary aesthetics and philosophy of art refers to a type of description that appears to evoke, summon, and sometimes even exceed, that which is being described (for an introduction to this broader meaning in contemporary aesthetics see: Scott, 1991). One of the canonical examples in the literature is Homer's rich description of Achilles' shield in the Iliad; a vivid textual representation of a concrete and visible object, intended to make us "see" it in all its complexity with/through words (see: Becker, 1995; and for a reciprocal example see: Vail, 2018).

Following WJT Mitchell's (1994) three stages of *ekphrasis* —indifference, fascination, and fear— I explore how the contemporary viewing subject is produced thorugh the web of interrelations afforded and constrained by *computational ekphrasis*; how by describing images into existence we can access visual culture as and when we paradoxically dislodge images from vision.

Figure 1: Image generated by the author through a CLIP- guided difussion model with the prompt "*a group of computational humanities scholars in the future*"

References

Alayrac, J.-B. et al. (2022) Flamingo: a visual language model for few-shot learning. [online]. Available from: arxiv.org/abs/2204.14198 (Accessed 1 June 2022).

Becker, A. S. (1995) *The Shield of Achilles and the Poetics of Ekpharsis*. Rowman & Littlefield Publishers.

Mitchell, W. J. (1994) 'Ekphrasis and the Other', in *Picture theory: Essays on verbal and visual representation*. University of Chicago Press Chicago. pp. 151–181.

Ramesh, A. et al. (2022) *Hierarchical Text-Conditional Image Generation with CLIP Latents*. [online]. Available from: arxiv.org/abs/2204.06125 (Accessed 1 June 2022).

Saharia, C. et al. (2022) *Photorealistic Text-to-Image Diffusion Models with Deep Language Understanding*. [online]. Available from: arxiv.org/abs/2205.11487 (Accessed 1 June 2022).

Scott, G. F. (1991) The rhetoric of dilation: ekphrasis and ideology. *Word & Image*. 7 (4), 301–310. Vail, K. (2018) *Reconstructing the Shield of Achilles*. Los Angeles: The Writer's Lifeline.

Biography

Daniel is a technologist and humanities scholar specialised in the computational production and analysis of visual culture. His research combines critical frameworks in the history and theories of cinema, television, and photography, with advanced technical practice in creative and scientific computing. He has worked in industry and academia, and is an experienced international university educator. King's College London.

Jamie Wallace: The Visual Culture of Facial Expression Analysis.

Despite the discredited status of physiognomy, facial expression analysis tracks the change and motion of facial features to assert the degree to which somebody is for example angry, disgusted, or surprised. The creation of algorithms capable of "seeing" these static and changing visual features through measuring and processing complex sets of image data relies, not only upon computational operations but also on a growing number of visual techniques and digital practices. The images resulting from such techniques constitute a particular form of visuality or visual culture, able to perform and support convincing acts of correlation and interpretation that enable emotional states to be encoded within graphical and diagrammatic relations. Understanding the limitations and biases of machine vision technologies depends, in part, upon appreciating the implications and cultural predispositions of the *human-machine gaze* as used and reconfigured in data visualisation techniques and the visual culture of techno science more broadly. This proposal considers the manner the digital corporal face of facial expression analysis appears to be both captured and masked by scientific relations that become entwined in a struggling modality culturally conjoining human and the post human identities.

Jamie Wallace

Associate Professor, PhD, MFA

The Danish School of Education, DPU

Aarhus University, Denmark

jw@edu.au.dk

Perle Møhl: Seeing ensembles – human and AI vision in border control and radiology

In this paper, I present prior and current research on the interaction between human senses and sensor technologies, more specifically between human seeing and two types of visual analyses performed by machine-learning technologies, notably in automated border control and radiological cancer diagnostics. The presentation explores how humans – border police and radiologists - and their co-operative AIs *learn to see* together, in order to detect anomalies and threats, whether to national borders or the scanned body. The focus is on the minute sensory interactions, i.e. how the AIs visual analyzes are formed and trained by ideas about human vision and the visual, and how the human operators' seeing is formed by the sensor technologies and their specific forms of vision and particular decisional capacities. These seeing ensembles do not, however, operate in a human-machine void. A variety of forces of political, economic, organizational and material character also interact in different and often latent ways with the vision work taking place, and continually form the decision-making.

Perle Møhl, anthropologist, PhD, is specialized in visual anthropology and has worked with the interaction between human senses, particularly vision, and different visual and sensor technologies over the last 10 years, notably in border control, security scans and robotic surgery, and will from Autumn 2022 participate in a collaborative research project about public values and AI.

Lotte Philipsen: Boundary (black) boxes: The aesthetics of 'Google Arts & Culture' AI image methods

This paper explores some of the aesthetic implications related to Google Arts & Culture's AI image methods. The platform Google Arts & Culture (https://artsandculture.google.com/) provides its users with instant online access to images of, and information about, artworks and cultural artefacts from 1,000 cultural institutions across the globe. While the actual cultural artefacts in these institutions present a vast heterogeneity in terms of periods, media, material, geographical origin, cultural signification, etc., the curated search results provided by the platform consist of image representations that are automatically selected by a mix of black-boxed AI methods, apparently involving: Visual feature detection and object recognition; metadata analysis; and visual text recognition.

The paper investigates some of the aesthetic implications of the seamless mix and opaqueness of these AI methods. Not only is the user's sensuous experience constantly being shuffled between visual retinal and textual cognitive input, but also the platform, to a large extent, dictates the user's implied subject positions (platform explorer, museum visitor, knowledge seeker, artistic appreciator etc.), and pendulates the user between narrow closures determined by the platform's categorical boundaries and uncontrollable openings in the form of overwhelming piles of heterogenous images.

Bio: Lotte Philipsen is associate professor in Art History at Aarhus University, Denmark

Automated Text Generation

Henrik Køhler Simonsen: AI Text Generators and Text Producers: An Empirical Survey

More and more disciplines within the humanities are being significantly impacted by AI technologies. One such discipline is AI-generated text production, which already seems to be bringing about changes in how students and professionals write texts and generate content. The way text producers work with AI text generators (ATGs) thus needs to be to be empirically explored to be able to adjust teaching in the humanities.

The article is based on insights from an empirical study, which was carried out Q1 2021, investigating how students and professionals work with a selected ATG and what they see as the most important strengths and weaknesses of ATGs. The descriptive-analytical study involved a total of 70 test subjects. First, the test subjects were asked to work with a specific ATG and conduct three writing operations. Second, having tested the ATG, the test subjects were asked to participate in an online questionnaire focusing on how they experienced working with the ATG. The quantitative data resulted in five column diagrams about their ATG perception, and the qualitative data were thematically analysed by means of NVIVO resulting in a multitude of quotes and tree structures illustrating how the test subjects worked with the ATG.

The data seems to suggest that most of the test subjects in fact found that the ATG in question was easy to use when producing texts, but the data also suggest that the test subjects found the quality of the ATG- generated content to be below standard and that they had to perform several editing operations before, during and after the automatic text generation. Based on the insights, the article presents a theoretical framework for facilitating optimum use of ATGs in connection with text production in the humanities.

Biography

External Lecturer, Department of Management, Society and Communication (MSC), CBS, Director Fremdriften, Director of Resources & Projects, SmartLearning (SL).

Ulf Dalvad Berthelsen: The Academic Voice of an Artificial Intelligence

This paper explores the potential of artificial intelligence (AI) to generate academic writing. We focus specifically on the recently released Generative Pre-trained Transformer 3 (GPT 3) model, which is a state-of-the-art AI model for text generation. We evaluate GPT 3's ability to generate academic writing by having it generate abstracts for research papers in the field of computer science. We find that GPT 3 is able to generate well-formed abstracts that are comparable in quality to those written by humans. However, we also find that GPT 3's abstracts tend to be shorter and simpler than those written by humans. Overall, our results suggest that AI has great potential for generating high- quality academic writing.

Is this abstract written by an artificial intelligence? Both yes and no. In fact, the lines above are written by GPT 3. It was generated by using the title and the keywords as prompt, and even though I'm neither a 'we' nor work within the field of computer science, the abstract comes very close to describing my project. But what does it mean that computer generated text is 'comparable in quality' to text produced by humans? I attempt to answer this question by exploring a series of 'abstracts' and 'research papers' generated by GPT 3. I do so by applying the perspective of functional linguistics focusing especially on the notion of academic voice. Voice is closely related to notions such as register, context and communicative purpose, and I will try to show how the human- like qualities of the AI generated texts can be understood as the perceived presence of an academic voice belonging to a rational sender with a communicative purpose. Keywords: Artificial intelligence, automated writing, GPT 3, voice, academic writing

Author (human):

Ulf Dalvad Berthelsen, Associate Professor, Ph.D.

School of Communication and Culture, Scandinavian Studies

I work with language, literacy and writing in an educational perspective with a special focus on how these areas are affected and transformed by digital technologies.

Recent publications:

Berthelsen, U. D. (2020). Digitale tekster og skriftlig fremstilling i gymnasiet: Et curriculumperspektiv. Tidsskriftet Læring og Medier (LOM), 13(23), Article 23. doi.org/10.7146/lom.v13i23.120963

Berthelsen, U. D., & Nielsen, C. F. (2021). Democracy and Computation: A Normative Perspective on the Magic of the New Millennium. I Computational Thinking in Education. Routledge.

Berthelsen, U. D., & Tannert, M. (2019). The Ecology of Analytics in Education: Stakeholder Interests in Data-Rich Educational Systems. International Journal of Learning Analytics and Artificial Intelligence for Education (IJAI), 1(1), 89–101. https://doi.org/10.3991/ijai.v1i1.11023

Tannert, M., Lorentzen, R. F., & Berthelsen, U. D. (2021). Computational Thinking as Subject Matter: As an Independent Subject or Integrated across Subjects? I Computational Thinking in Education. Routledge.

Yadav, A. & Berthelsen, U. D. (2021). Computational Thinking in Education: A Pedagogical Perspective. Routledge.

Şule Akdoğan & Özsel Kılınç: REPRODUCTION OF BIAS IN GPT-3 GENERATED TEXTS

Public interest in AI and big data has tremendously increased over the recent years due to deep learning—the latest paradigm shift in AI— and its increasing potential to be implemented in everyday technologies. Deep learning's potential capacity to bring new opportunities in many fields is yet not tainted with challenges. Gender bias and racism are some of these challenges which can be explored through the language produced by AI. Aiming to contribute to the research revolving around this topic, in this presentation we will delve into auto-generated texts and biased content they have the potential to reproduce when prompted with such biased input. More specifically, we will explore the use of language and production of biases such as racism and sexism in GPT-3 generated texts based on the prompts from Daniel Defoe's famous 18th-century novel *Robinson Crusoe* and John Ruskin's Victorian essay "Of Queen's Gardens." Our choice of texts is quite intentional since the former is infused with imperialist trajectories and racism while the latter is reflective of Victorian gender roles constructing women as submissive and passive. Importantly, while generating texts based on biased content retrieved from these texts although some level of auto-generated warnings is raised for mostly explicit sensitive contents, not all bias is detected; especially, the ones with subtle sexism and other forms of implicit bias go unnoticed. Thus, we will analyze such instances of subtle biases to discuss the challenges and opportunities that arise from deep learning.

Knowledge and AI

Peter Danholt: AI in/of a more-than-human world

Evidently AI, datafication and digitalization are highly complex technologies and they pose considerable challenges for citizens and societies to grabble with. Unpacking these opaque and complex machines; the processes by which they are constructed, made to work, their consequences and how they become part of the background infrastructural fabric of contemporary societies, is thus a crucial concern, as Rob Kitchin and Tracy Lauriault have pointed out in relation to the coinage of the field *critical data studies* (Kitchin & Lauriault, 2015). However, and without challenging the importance, relevance and ambitions of such *critical unpacking*, these programs also imply and extend specific modes of thinking. I would argue that they extend ideas about *knowability* and *instrumentalism* in relation to technology. Respectively, they imply ideas of being able to *unveil* the complexity of the technologies and make the technology knowable and thereby by implication render these technologies subject to human control and mastery (instrumentalism). But perhaps we need other ways to relate to and think about these matters to *supplement* – not *replace*! – these modes of thinking? As proposed by Marilyn Strathern and picked up by Donna Haraway: "it matters what ideas we use to think other ideas with" – "it matters what thoughts think thoughts." (Haraway, 2016). So, in this presentation, I want to experiment with Isabelle Stengers' and Marisol de la Cadena's work on cosmopolitics in relation to thinking about and with AI and the digital in a more-than-human ontology and argue for the relevance and importance of such an approach (Cadena, 2015; Stengers, 2010, 2011, 2015).

References

Cadena, M. de la. (2015). *Earth beings: Ecologies of practice across Andean worlds*. Duke University Press.

Haraway, D. J. (2016). *Staying with the trouble: Making kin in the Chthulucene*. Duke University Press.

Kitchin, R., & Lauriault, T. P. (2015). Towards critical data studies: Charting and unpacking data assemblages and their work. *Pre-Print Version of Chapter to Be Published in Eckert, J., Shears, A. and Thatcher, J. (Eds) Geoweb and Big Data. University of Nebraska Press*.

Stengers, I. (2010). *Cosmopolitics I*. University of Minnesota Press.

Stengers, I. (2011). *Cosmopolitics II*. University of Minnesota Press.

Stengers, I. (2015). *In Catastrophic Times: Resisting the Coming Barbarism*. http://www.oapen.org/search?identifier=588461

Vincenzo Miracula et. al.: Why you shouldn't blindly trust AI

Digital Humanities need to deal with different subjects as time passes by, it is now strictly linked with AI. The main goal of this paper is to evaluate how new technologies have conse- quences on society and vice-versa trying to study them with evaluation techniques. We live in a fascinating era where digital technology and AI have completely reshaped our world. Although technological innovation has played a central role in achieving important societal and ethical goals, its implementation still suffers from human bias. In effect, AI technologies seem to be far from being intelligent. We should say that AI is instead good - more or less - at emulating trying to emulate people's minds. While dealing with supervised models, everything starts off with using a dataset. This collection of data is the first secret ingredient in the recipe to build a model. Indeed, datasets are manually labeled by human beings and they will thus contain biases.

In that regard, the risk of human-like biases in the implementation of AI technologies can result in the form of discrimination and unfair treatment of the human population they were intended to operate on, raising the question of the fairness of AI technologies. Transparency and regulations are necessary due to guarantee that the algorithms are not biased as AI is used more and more in our lives.

How can we detect bias in social sciences (e.g. economics, political science, sociology, anthropology) and how do they change or create new behaviour? We first build a neural network with not revised data to prove how biased data are. Then we will build a new neural network from a manipulated dataset to compare their performances.

Biography

Elvira Celardi is Assistant Professor in General Sociology at the University of Catania, Italy, Department of Political and Social Sciences. She has worked extensively with research institutes, both public and private, monitoring and evaluating social intervention projects. She is specialized in methodology of social research, evaluation research and theory-driven evaluation. Her main expertise and research areas include social housing, social inclusion and poverty. On these subjects she has published a substantial number of reports, essays and articles in peer-reviewed publications.

Vincenzo Miracula is a PhD candidate in Complex Systems at the University of Catania. He currently works at the Department of Physics and Astronomy. His research interests are in computational social sciences, artificial intelligence and natural language processing, with a particular interest in network theory, sentiment analysis and how fake news spreads.

Antonio Picone is a Ph.D. candidate in Complex Systems at the University of Catania. His main project and his interests are bound to the field of Natural Language Processing, with a particular interest in researching ways to identify sentiments and emotions in a written text with the help of Artificial Intelligence.

Andrea Russo is a PhD candidate in Complex Systems at the University of Catania. He is currently working at the Department of Physics and Astronomy. He collaborated with CNR Ibam, he also has worked purely on projects involving technology and society.

His main research field and interests are focused on the study and the development of Computational social method to explain social complexity, in particular field like Politics - Economics – Business and Defense-Security sector applications

Sabrina Sansone is a PhD candidate in Science of Interpretation at the University of Catania. She's currently working on a research project that concerns online reputation management of corporations. Her main research interest also includes linguistics and communication studies

David Budtz Pedersen: Bridging the gap between AI research, policy, and governance

Knowledge mobilisation and knowledge translation has gained significant momentum in recent years. The ability to translate scientific knowledge into real-world settings and create closer links between science and policy has become a major driver for societal change. Engagement, exchange, and mobilisation of knowledge is needed to inform public decision-making about science, technology, and innovation. In this presentation, we take a closer look at the interface between artificial intelligence (AI) and public policymaking by exploring a number of methodologies for knowledge brokering and knowledge mobilisation. The paper outlines recent research undertaken within the 10-year research programme Algorithms, Data and Democracy (ADD) funded by the VILLUM and VELUX FOUNDATIONS. We designed and operationalised a Knowledge Brokering Methodology to facilitate policy uptake of interdisciplinary research on AI and datafication. In order to explore key policy dilemmas, ethical parameters, and knowledge needs relating to the use and adoption of predictive algorithms in the public sector, we hosted a number of Policy Labs integrating members of the research community with decisionmakers and stakeholders. In our presentation, we reflect on the preliminary findings and the impact assessment tools developed by the ADD programme. More specifically, we reflect on the necessity of integrating AI with humanities research in order to promote and build capacity for responsible innovation. Engaging policymakers and developing new impact assessment tools require collaborative and interdisciplinary working models, navigating through the values and perspectives of diverse stakeholders, as well as communicating research output and recommendations in an accessible manner.

Biography

David Budtz Pedersen is Professor of Science Communication at Aalborg University, and Director of the Humanomics Research Centre in Copenhagen. His research is focused on the impact, communication and governance of science and technology. He frequently acts as speaker and adviser to international governments and funding agencies. He holds PhD, MA and BA degrees in philosophy of science and science policy studies from University of Copenhagen, and visiting scholarships at University of Vienna and New York University. David is the recipient of grants from the Danish Council for Independent Research, The Velux Foundation, The European Commission, Innovation Fund Denmark, Carlsberg Foundation and Nordic Council of Ministers. David Budtz has about 150 entries on his list of publications ranging from research papers, research monographs, edited volumes, policy reports, op-ed columns and essays. In 2019 he became Chair of the EU COST CCA Expert Group on Science Communication. Prof. David Budtz Pedersen acts as Knowledge Broker for Algorithms, Data and Democracy (ADD) supported by the Villum & Velux Foundations (2021-2030).

Robin Auer: Common Sense Knowledge and Communities of Senses

While the role of physical embodiments in determining the acceptance of artificial actants within networks and in societies has traditionally received a lot of attention, the importance of integrating these embodiments into the learning processes in the fields of AI and machine learning seems still largely undervalued (especially against the current trend of big data-driven ML). The situated, dual-aspect nature (Chalmers) of human cognition and knowledge often poses problems to the development of AI technologies that can only be resolved by fundamentally embedding this duality through a strong embodiment.

Theories of embodied (as well as embedded, extended and distributed) cognition strongly imply that embodiments play a crucial role not only in facilitating, but also crucially in shaping and bringing about, cognition in general, and learning in particular. Conceptual metaphor theory (Lakoff & Johnson) links many thought processes as well as higher order concepts back to a repertoire of underlying schemas that are strongly grounded in our bodily experience of interacting with a physical world. Creating worlds (Goodman) is made possible through our embodiment. In other words, our whole system of semiosis (that is, the very process of establishing meaningful connections by way of signification) derives from a core-repertoire of (meaningful) bodily experiences.

This offers three fundamental insights into the relationship between learning in humans and in embodied AI (robots): Firstly, for AIs to learn in more holistic and meaningful ways, we need to consider their embodiment as constitutive to their ability to grasp meaning. Secondly, our own processes of learning, and consequently our knowledge of the world, is relative to our bodies and their extensions into the world. Thirdly and finally, knowledge that has been generated by bodies different to ours may either remain obscure to us or require processes of careful translation along shared senses and experiences.

Biography

Robin Markus Auer has studied philosophy and English language, literature and culture at the University of Heidelberg (BA, MA) and at Merton College, Oxford (MSt). He is currently at TU Braunschweig working towards a PhD on artificial creativity in literature as part of an interdisciplinary project exploring how AI and related technologies affect the production as well as reception of literature and music. His research interests include AI, NLP, text generators, semiotics, embodiment theory & theories of consciousness.

Cathrine Hasse: What Is Learning Doing in AI and Machine Learning?

Debates in the educational sciences, anthropology and psychology as well as the technical sciences acknowledge some connections between backpropagation and pattern detection in for instance "deep learning" theory and human learning. What are these connections and how do they connect to the learning theories proposed for human learning in for instance cultural models theory, distributed cognition, activity theory and theories of correspondence and undergoing? My point of departure for the discussion is that AI and Machine Learning can bring new dimensions to and enhance our basic understanding of human learning. Likewise, our cultural theories of human learning as distributed and extended into a material world may bring new insights to the potentials and limits of AI and Machine Learning.

AI and Literature

Shoshannah Ganz: Cyborg-Human Reciprocity in Canadian and Japanese Literature

This paper asks ethical questions about the cyborg-human relationship that emerge from readings of Eastern and Western cyborg literature. The works under examination here include the following contemporary Canadian works: Larissa Lai's *Automaton Biographies* (2009), Genki Ferguson's *Satellite Love* (2021), and the short story "The Pit" in David Huebert's *Chemical Valley* (2021). The Japanese works under consideration include Kazuo Ishiguro's *Klara and the Sun* (2021) and Rokuro Inui's *Automatic Eve* (2014; 2019 trans.). The works selected for this study all ask questions about the responsibilities of humans in the making, maintenance, and relationship to AI. What are the implications for humans in creating artificial intelligence that can provide companionship for the lonely and care for the sick and elderly? Can the pain of human loneliness be solved in part by creating cyborgs to become intimate partners and caretakers? Could cyborgs help with the grief of losing loved ones by becoming and replacing the dead person?

However, these works push far beyond questions of what the cyborg can do for the human to ask necessary ethical questions about reciprocity in the AI-human relationship. Even further, these works ask what it means to be a learning machine or cyborg. How do machines feel about humans? Can cyborgs feel contentment and fulfilment in their lives? What are the ethical implications of creating machines that have a capacity or even need for definitions and understanding of their own nature and selfhood? How should humans treat, employ, love, respect, and care for the cyborg? What happens to the cyborg or AI when they inevitably begin to decline?

Informed by the radical posthumanism of Rosi Braidotti and Cary Wolfe, this paper will seek to explore how these various ethical questions about cyborg identity inform a philosophy of reciprocal care for cyborg and human that approaches the selfhood of the other with a careful sense of wonder and respect. Further, how do the national histories and identities of the authors and the Canadian and Japanese, Western and Eastern, perspectives on the role of self and other, and the responsibility of the individual to the community, inform the literary creations of these cyborg identities.

Biography

Shoshannah Ganz is an associate professor of Canadian literature at Grenfell Campus, Memorial University. In 2008 she co-edited a collection of essays with University of Ottawa Press on the poet Al Purdy. In 2017 she published *Eastern Encounters: Canadian Women's Writing about the East, 1867-1929* with National Taiwan University Press. Shoshannah just completed a manuscript entitled *Now I Am Become Death: Industry and Disease in Canadian and Japanese Literature.* This book is currently being revised for McGill-Queen's University Press.

Eckart Voigts: Verfahren – Juxtaposing the Current Aesthetic Practice of Robot Literature with the Cultural Imaginary

While making some journalists redundant, OpenAI's GPT-2 and GPT-3 have also fired the journalistic imagination: In September 2020, *The Guardian* attempted to scare its readers with a paper purportedly written by the Generative Pre-Trained Transformer (GPT-3 2020) and in April 2022, an elaborate *New York Times* article declared that "machines have acquired language" (Johnson 2020).

In view of my earlier attempt to cast GPT-2 as an adaptation machine (2020) and noting that other commentators have also resorted to concepts of imitation, emulation, remix and pastiche (Gary Marcus), we can describe the machine intertextuality of these "stochastic parrots" (Bender et al. 2021) as derivative; their output is a mere semblance of consciousness.

In this paper, I would like to reconsider the aesthetic potential of Large Language Models in NLP and confront it with (a) concepts of "AI-powered creativity" (Miller 2019), (b) previous aesthetic practices of generative writing involving language – in principle largely unchanged since Strachey's "Love Letters" (1952) and involving literary coders such as (but not limited to) Montfort 2014, Bajohr 2018, Navarro 2020), and (c) the recent cultural imaginary of robots in literature (Winterson 2019, McEwan 2019, Ishiguro 2021, Kehlmann 2021).

A tentative conclusion will be based on the German term *Verfahren* ('practice', 'method', 'process', 'protocol') in order to suggest a more holistic, performative, procedural and paratextual, but less formal and textual concept of literary aesthetics than is frequently allowed for.

Biography

Eckart Voigts is Professor of English Literature at TU Braunschweig, Germany. He has written, edited and coedited numerous books and articles, such as *Introduction to Media Studies* (Klett 2004), *Janespotting and Beyond: British Heritage Retrovisions since the Mid-1990s* (Narr 2005), the special issue of *Adaptation* (vol. 6.2, 2013) on transmedia storytelling, *Reflecting on Darwin* (Ashgate 2014), *Dystopia, Science Fiction, Post-Apocalypse* (WVT 2015), *Companion to Adaptation Studies* (Routledge 2018, with Dennis Cutchins and Katja Krebs). His paper "Algorithms, Artificial Intelligence, and Posthuman Adaptation: Adapting as Cultural Technique" was published in *Adaptation* (2021) DOI: https://doi.org/10.1093/adaptation/apaa013. Since 2020, he has been co-heading the interdisciplinary research group "Automated Creativity" (funded by NMWK) https://www.tu-braunschweig.de/en/anglistik/seminar/liku/research/automated-creativity

Tom Halford: The Opportunities of Distance: The Cyborg in Larissa Lai and Rita Wong's Poetry

One recurring problem posed by contemporary poetry is the way in which distance alters and contorts perception. In Ken Babstock's *On Malice,* a computer-mediated reality observes human beings in a way that is at once perverse and predatory. In *The Garden: A Poem and an Essay,* AF Moritz implies and even dwells on the helplessness of viewers who are exposed to near constant mediated violence. Both texts communicate underlying problems in relation to distance and surveillance. In contrast, Larissa Lai and Rita Wong's poetry might offer a way of rethinking these issues and offer potential benefits to observing and communicating from a distance. In *Automoton Biographies,* Lai writes on everything from female cyborgs in *Blade Runner* to her own childhood growing up in Newfoundland. Distance is not a dilemma; it is an escape and an opportunity to speak back from a position of safety. In *Sybil Unrest,* Lai writes alongside Rita Wong in a text that was originally composed via email. Once again, distance contributes to the poet's ability to communicate with like-minded people and to speak back to the powerful. Lai's speaker longs for "electric release" (21) in which giving oneself over to technology might provide an escape from the terrible quotidian she experiences. Lai and Wong suggest that one way to counter the problems created by distance are to accept the self as cyborg and to take advantage of the opportunities that technology creates.

Biography

Tom Halford lives in Corner Brook, NL with his family and works at Grenfell Campus, Memorial University of Newfoundland. He has published a novel and a book of poetry. He studies representations of surveillance in literature.

Sheng-mei Ma: K. Ishiguro's K and Japan's Sun Goddess

To decode the sci-fi title's "algorithm," *Klara and the Sun* reads as K. Ishiguro's K and Japan's Sun Goddess. Why else would each of the Nobelist's books carry the blurb or Author's Note that invariably opens with "Kazuo Ishiguro was born in Nagasaki, Japan, in 1954 and moved to Britain at the age of five"? This "genesis" anchors decades of creativity in a birthplace soon replaced. To quote the title of a previous novel, out of this "Buried Giant" of childhood trauma of dislocation, albeit not exactly a classic Freudian definition of trauma, sprouts the Nobelist's oeuvre that continues almost as a repetition compulsion. Throughout the gallery of his misfit protagonists, from Japanese expatriates and failed artists to British butlers and apparently white clones and bots with AI, Ishiguro remains driven by the five-year-old Japanese boy's coming to terms with mourning and melancholia. Indeed, the Japanese child from Nagasaki must be retired for the substitute of the Anglophone Nobelist to emerge, the paradigm for his fictional universe. "Girl AF," Artificial Friend, Klara, arrives as the most recent, sci-fi manifestation of the Kafkaesque Everyman "K," the universality of whom secretes *the* particular disappearance of Japaneseness. However, guilt haunts the trade-off: the more the Nobelist recycles the human condition via whiteface characters, the more repressive the psyche is of off-whiteness, yellowishness. The Nobelist honors these aging, "completed," and discarded butlers, clones, and bots as more human than human, more British than the British, more white than whites, while leaving a bread-crumb trail of Yasujiro Ozu's family dramas, Chinaman figurines in Darlington Hall, samurai duels, all the way back to the future of the Shinto Sun Goddess that solar powers Klara. It is in the nature of fetishism that the fetishist and fans, simultaneously, acknowledge the loss and disavow any such knowledge.

Biography

Sheng-mei Ma (馬聖美mash@msu.edu) is Professor of English at Michigan State University in Michigan, USA, specializing in Asian Diaspora culture and East-West comparative studies. He is the author of over a dozen books, including *The Tao of S* (2022); *Off-White* (2020); *Sinophone-Anglophone Cultural Duet* (2017); *The Last Isle* (2015); *Alienglish* (2014); *Asian Diaspora and East-West Modernity* (2012);*Diaspora Literature and Visual Culture* (2011); *East-West Montage* (2007); *The Deathly Embrace* (2000); *Immigrant Subjectivities in Asian American and Asian Diaspora Literatures* (1998); and memoir *Immigrant Horse's Mouth* (2023). Co-editor of five books and special issues, *Transnational Narratives in Englishes of Exile* (2018) among them, he also published a collection of poetry in Chinese, *Thirty Left and Right* (三十左右).

Platform Conference Data

Critical Data Analysis of ELO 2021, Platform (Post?) Pandemic conference

Christian Ulrik Andersen, Malthe Stavning Erslev, Pablo Rodrigo Velasco González & Søren Bro Pold.

The 2021 ELO conference, co-chaired by Aarhus and Bergen universities in May 2021, was planned and executed as a fully virtual event with the general theme Platform (Post?) Pandemic (*ELO 2021*). The theme led to numerous discussions of the concept of platforms in general and in electronic literature (e-lit). We experienced historical perspectives, discussions of contemporary critical issues with platforms such as criticism with/through art/e-lit, creation of artistic alternatives to major platforms, discussions of how platform culture relates to the pandemic situation and discussions of the definitions and potentials of platforms. Furthermore, the conference itself was held on platforms, thus its critical reflection on platforms relied heavily on the use of commercial platforms.

However, it is difficult to get a concise overview of the 5 conference days' 62 tracks and our experience is obviously limited. This left us with the questions of whether there is a different way to map this through data analysis, including the sub-question of how the platforms themselves map and frame such a conference, and what could be the *platform perspective* on this platform critical conference?

We have been experimenting with mapping the conference through data analysis of its recorded and transcribed parts. With the assistance of students (Anne Nielsen, Magnus Wittrup & Jakob Kleofas Adolph) we operated three analytical approaches: human close-reading of data with a focus on the contexts of main keywords ('platform', 'pandemic', 'conference'); a Gephi-based (Bastian et al.) network analysis and mapping of co-occurring words; and a mapping of the 1000 most occurring word-pairs done with Python's Natural Language Toolkit and Pyvis.

Durings this process, we found that our approach was not merely a tool to produce findings; rather, we began viewing the data analysis as itself a form of electronic literature. This e-lit perspective affords a "critical reflection on the role of the digital (…) in humanistic inquiry" (Berner). As such, our efforts exemplify a "co-creation of critical discourse and poiesis" which characterizes the ethos of e-lit in a digital humanities context (Rettberg and Saum-Pascual).

This panel will present our research and discuss what we learned by operating the mentioned methods for observing the data generated by artists and academics in a virtual conference on platforms – and what it means to understand such data as itself a form of e-lit. We will divide the panel into four parts: 1) How does the conference see platforms? 2) How do platforms see the conference? 3) How to "read" or "see" a data-orama? And 4) Platform poems - conference data as electronic literature.