

Explainable AI for the Arts 2 (XAIxArts2)

Nick Bryan-Kinns
University of the Arts London
London, United Kingdom
n.bryankinns@arts.ac.uk

Helen Kennedy
University of Nottingham
Nottingham, United Kingdom
Helen.Kennedy@nottingham.ac.uk

Drew Hemment
University of Edinburgh
Edinburgh, United Kingdom
drew.hement@ed.ac.uk

Lanxi Xiao
Tsinghua University
Beijing, China
tarolancy@gmail.com

Michael Clemens
University of Utah
Salt Lake City, USA
michael.clemens@utah.edu

Corey Ford
Queen Mary University of London
London, United Kingdom
c.j.ford@qmul.ac.uk

Alan Chamberlain
University of Nottingham
Nottingham, United Kingdom
Alan.Chamberlain@Nottingham.ac.uk

Zijin Li
Central Conservatory of Music
Beijing, China
lzijin@ccom.edu.cn

Gus Xia
MBZUAI
Abu Dhabi, UAE
gus.xia@mbzuai.ac.ae

Gabriel Vigliensoni
Concordia University
Montréal, Canada
gabriel.vigliensoni@concordia.ca

Shuoyang Zheng
Queen Mary University of London
London, United Kingdom
shuoyang.zheng@qmul.ac.uk

Makayla Lewis
Kingston University
London, United Kingdom
M.M.Lewis@kingston.ac.uk

Qiong Wu
Tsinghua University
Beijing, China
qiong-wu@mail.tsinghua.edu.cn

Jeba Rezwana
Towson University
tbc, USA
jrezwana@towson.edu

ABSTRACT

This second workshop on explainable AI for the Arts (XAIxArts) brings together a community of researchers and creative practitioners in Human-Computer Interaction (HCI), Interaction Design, AI, explainable AI (XAI), and Digital Arts to explore the role of XAI for the Arts. XAI is a core concern of Human-Centred AI and relies heavily on HCI techniques to explore how to make complex and difficult to understand AI models more understandable to people. Our first workshop explored the landscape of XAIxArts and identified emergent themes. To move the discourse on XAIxArts forward and to contribute to Human-Centred AI more broadly this workshop will: i) bring researchers together to expand the XAIxArts community; ii) collect and critically reflect on current and emerging XAIxArts practice; iii) co-develop a manifesto for XAIxArts; iv) co-develop a proposal for an edited book on XAIxArts; v) engage with the wider discourse on Human-Centred AI.

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CCS CONCEPTS

• **Human-centered computing** → **Human computer interaction (HCI); Interaction design; Visualization;** • **Applied computing** → **Arts and humanities;** • **Computing methodologies** → **Artificial intelligence.**

KEYWORDS

explainable AI (XAI), Artificial Intelligence (AI), arts, generative arts, Human-Computer Interaction (HCI), Interaction Design

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1 WORKSHOP TOPIC

The field of explainable AI (XAI) [13, 18] seeks to make complex and hard to understand AI models such as deep learning more understandable to people and can contribute to increased trust in AI and safer AI deployment. These approaches make XAI a core part of the broader fields of Responsible AI and Human-Centred AI [24, 26], and a hot topic in Human-Computer Interaction (HCI) research. Currently, XAI research mostly examines technical explanations of what an AI is doing [5–8]. For example, providing explanations of how an image classifier works to help debug it when misclassifications are made. This reflects the current emphasis on technocentric

explanations typified by leading XAI research such as Gunning [13] and Guidotti et al. [12]. The Arts provide an alternative lens through which to examine XAI, opening questions such as: what does it mean to explain AI models in an artistic context where activities are open-ended and subjective? How are such explanations different from current task-oriented and objective explanations? How can XAI make AI more accessible and ethical in creative practice? What insights might explore these questions have for XAI research and Responsible AI more broadly? And how do we strike a balance between explanation, exploration, surprise, and sense-making in the Arts? For example, Armitage et al. [2] recently explored the potential for XAI in live-coding and spatial music practices, highlighting the “complexities and nuances of applying XAI in the Arts” (ibid). Importantly, artistic practices also offer alternative values and approaches to explanation than current technocentric explanations of AI. Taking this approach raises questions of how practice-based approaches might be used to create more engaging and nuanced explanations of AI.

This workshop will be the second international workshop that explores how XAI might be used in the Arts and how the Arts might contribute to new forms of XAI. It will examine the challenges and opportunities at the intersection of XAI and the Arts (XAIxArts), offering a fresh and critical view on the explainable aspects of Responsible AI and Human-Centred AI more broadly. The workshop will offer ACM Creativity and Cognition conference attendees a chance to engage in debate and discussion on the role of XAI in the Arts and consider how XAIxArts might contribute to wider discourse on Responsible AI and Human-Centred AI.

1.1 Workshop Objectives

This second workshop on XAIxArts builds on the community that we brought together at ACM Creativity and Cognition 2023. Our first workshop brought together 26 participants online with 14 accepted submissions to explore the landscape of XAIxArts and identify emergent themes to help frame XAIxArts. The objectives of this workshop are to build on the success of our first workshop to:

- Expand our international community of researchers and practitioners who explore XAI for the Arts. We would especially like to expand our community in North America, which is currently underrepresented.
- Collect and critically reflect on current and emerging XAIxArts practice to provide illustrative examples of our five XAIxArts themes (see Section 2).
- Co-develop a manifesto for XAIxArts to capture the meaning(s) of explainable AI for the Arts and to provide a vision for the value of deploying XAI in and for the Arts.
- Co-develop a proposal for an edited book on XAIxArts e.g. with Springer.
- Engage with the wider discourse on Responsible AI and Human-Centred AI to better frame XAIxArts and convey its value to the wider research community.

We will explore these objectives in the workshop through the lens of themes identified in our first workshop (outlined in Section 2) and the activities described in Section 4.1.

2 WORKSHOP THEMES

We propose five main themes for the workshop below drawn from discussions in our first workshop on XAIxArts [8] as summarised in [6].

Temporal aspects of explanations. Moment-by-moment feedback is essential for the creative process in Arts domains from music to sketching. For example, Vigliensoni and Fiebrink [27] explored real-time AI audio generation which requires immediate feedback and audio generation whilst navigating an AI model. Importantly for XAIxArts in-the-moment explanations differ in style from the post-hoc explanations typical of broader XAI research. The role of time itself may also be different in XAI for the Arts compared to broader XAI approaches. For example, creative practice unfolds over seconds, days, or even years. This contrasts single-shot use of XAI more broadly where an explanation might be used to understand an AI’s decision and is then discarded. Additionally, AI explanations should consider the phase of the creative process, as it influences user preferences for AI contributions, as highlighted by [16].

Tailored explanations. Explanations need to be tailored to individual users based on their skills, experience, and context, as there can be no single appropriate explanation [25]. For example, tailoring explanations to an individual’s AI literacy [11] and abilities [4]. Moreover, in the Arts we may need to tailor explanations to audiences and even bystanders.

AI as material. An AI model might itself be an artwork and in XAIxArts, traversing an AI model may be both an artwork and a form of explanation. For example, artists navigating a generative AI model to expose its bias [1] or navigating a model’s latent space to explain its limits [23]. Or creating AI Artworks that are experienced by and even navigated by audiences as a form of explanation [14, 28]. Indeed, current XAI could be augmented using creative methods from the Arts, interaction design and HCI to address XAI’s current focus on technical and functional explanations. These are artist-led rather than model-led or technologist-driven explanations of AI models in the Arts. However, they raise questions of who or what might be responsible for an explanation if it relies on sense-making of the art itself - is it the AI model, the artist, or the audience? And, how do we use Arts practices to inform the design of more intuitive, holistic, useful or engaging ways in which the decisions and actions of AI can be made more understandable to people?

XAI in generative tools. Current AI generative tools provide surprisingly little explanation of how they work, how artistic requirements might be specified or explored [29], nor how their use impacts the environment through energy consumption [15]. Furthermore, in artistic use of AI Generated Content (AIGC) we might want to actively search out and recreate errors or glitches in AI models as part of creative practice [17] rather than removing them as might be conventionally undertaken with XAI. Here XAI approaches such as contrastive examples [21] or conversational interfaces [30] might offer greater opportunities for trial-and-error creative practice with AI. Thinking further down the AI-artist journey, XAI may offer opportunities for artistic practice with AIGC to be recorded, revisited, and reinterpreted as a form of reflective practice [10] with AI. This explanation of practice might also offer

windows into the creative mind of the artist for the audience and consumers of their AIGC works.

Ethics and responsibility. Responsible AI is a key research field that XAI contributes to, especially in terms of explaining and understanding the ethics of AIGC. A concern for XAIxArts is how we might both support *and* disrupt trust in AI in the Arts. XAI could take a proactive role in explaining the provenance and attribution of AIGC [19] and its biases [1]. However, care needs to be taken in XAIxArts as the explanation of an AI Artwork may essentially devalue the constructed meaning of the piece [3].

3 WORKSHOP AUDIENCE AND PROMOTION

Our primary audience are researchers and creative practitioners in AI, XAI, digital arts, HCI, and Interaction Design. As part of our community building, we aim to reach out to the wider (digital) Arts community to invite submissions as we did in our first workshop, and we plan to use the Creativity & Cognition conference’s physical location in the USA to engage more participants from North America in our community as they are currently underrepresented. We will collate and share accepted submissions prior to the workshop as a way to encourage researchers and artists to think about the different approaches to the use of AI and how explainability and related issues emerge as part of creative practice.

A call for participation will be distributed inviting submissions for review, emphasising the importance of reflecting on the workshop’s themes. Learning from our community engagement in our first workshop, submissions can be of one of: i) 4-page position paper; ii) 4-page pictorial; or iii) a 5-minute video. The call will be sent to HCI email lists, including ACM Creativity & Cognition, ACM SIGCHI, AI research lists especially XAI and AI and Arts lists, Digital Arts lists including specific artistic domains such as New Interfaces for Musical Expression (NIME), and user interface and interaction design lists. In addition, we will distribute the call through our closed industry and practitioner networks.

4 WORKSHOP ORGANISATION

The workshop will operate in hybrid mode following the success of our first workshop which was held online. The workshop organisers will review the submitted position papers and select up to a maximum of 30 participants for the workshop. The selected papers, pictorials, and videos will be shared with participants via the workshop website prior to the workshop to spark pre-workshop reflection across papers. In addition, we will use the online collaboration platform Miro to support community engagement prior to, during, and after the workshop as we did for our first workshop as illustrated in Figure 1.

4.1 Workshop Tentative Schedule

The focus of the workshop is primarily on knowledge sharing and community expansion. Emphasis will be placed on building a manifesto of XAI for the Arts, drawing on the five themes of the workshop: Temporal aspects, Tailored explanation, AI as material, XAI in AIGC, and Ethics and responsibility.

The indicative workshop schedule is summarised in Table 1 with each part detailed in the following sections building on the workshop activities in our first workshop [8]. The proposed time of day



Figure 1: Miro board from the first XAIxArts workshop

is Chicago local time and we attempt to allow online participation from other timezones such as Europe (+6, +7, and +8 hours) and China (+13 hours in summer time) to be staggered across the schedule. We start with a pre-discussion online to allow for participation from Europe (UK timezone shown in Table 1) and China (CN timezone shown in Table 1). Themes and discussion points from this pre-discussion will be brought into the hybrid part of the workshop, which likely starts too late for participation from countries further East than Europe. Given the timezone differences, we expect that participants in Europe would only be able to participate until lunchtime and so we have staggered the activities to maximise in-person and online participation opportunities.

4.1.1 Lightning Presentations. Participants will each give a very short presentation of 5-10 minutes maximum (depending on the number of participants) about their use of, or interest in XAI for the Arts. Emphasis will be placed on the *uses* of XAI, which theme(s) their use of XAI relates to (Section 2), and showing demos or proof-of-concept XAIxArts systems where possible.

4.1.2 Themes. The workshop themes (Section 2) and open research questions [6] will be revisited by participants to ensure that they capture the themes in the emerging field of XAIxArts. Following the approach of our first workshop, participants will review and revise the themes using Miro. This revised set of themes and associated open research questions will form the basis for future publications, research proposals, and collaborations.

4.1.3 Manifesto. We will co-develop with participants an XAIxArts manifesto to set out our view of what XAIxArts means and what responsible use of XAI and the Arts might be. Emphasis will be placed on exploring what might be an agreeable definition(s) of *explainable* AI in the context of the Arts. This is a major challenge given the lack of agreement of what constitutes an explanation in XAI more broadly [6]. The manifesto will be drawn on our manifesto building experience e.g. [20], will be published on the workshop website, and will be used as the basis for a peer-reviewed publication about XAIxArts.

4.1.4 Community Building. Participants will propose steps to continue the community building from our two XAIxArts workshops,

Table 1: Indicative Workshop Schedule (Chicago local time)

Activity	Time (minutes)	Description
Online Pre-Discussion	04:00 (60) 10:00UK 17:00CN	Q&A for pre-recorded talks, discussion of themes and manifesto and initial community discussions
Welcome	09:00 (15) 15:00UK 22:00CN	Introduction and icebreaker
Presentations (§ 4.1.1)	09:15 (90)	12 x Lightning presentations with optional demo and brief Q&A
Coffee break	10:45 (15)	Refreshment and inspiration
Themes (§ 4.1.2)	11:00 (30)	Revise and expand XAIxArts themes and open research questions
Manifesto (§ 4.1.3)	11:30 (30)	Co-develop the XAIxArts manifesto
Community (§ 4.1.4)	12:00 (30)	Plans for edited book, network, future events, funding proposals
Lunch	12:30 (60) 18:30UK 01:30CN	Networking and interacting with demos over lunch
Presentations (§ 4.1.1)	13:30 (90)	12 x Lightning presentations with optional demo and brief Q&A
Coffee break	15:00 (15)	Refreshment and stamina building
Themes (§ 4.1.2)	15:15 (15)	Revise and expand XAIxArts themes and open research questions
Manifesto (§ 4.1.3)	15:30 (15)	Co-develop the XAIxArts manifesto
Community (§ 4.1.4)	15:45 (15)	Plans for edited book, network, future events, funding proposals
Close	16:00 22:00UK 05:00CN	Workshop closes with opportunities for convivial networking

including the proposal of an edited book on XAIxArts, future networking events, and identification of funding opportunities - see future plans in Section 5.

4.2 Tools for the Workshop in Virtual Space

The workshop itself will operate in a hybrid mode to support participation from a wide range of countries. Following our experience of our first workshop, all participants will pre-record videos of their presentations which can be viewed before the workshop and will be played in the workshop along with real-time question and answer sessions. We will use MTeams to support the online part of the hybrid workshop. A Miro board will be used to support brainstorming of the manifesto, and Slack will be used to support real-time communication outside MTeams.

To improve accessibility, online and in-person presentations will be recorded and auto-subtitled by MTeams and then made available on the workshop website to allow for asynchronous viewing, for example, across multiple time zones. In addition to the in-person workshop facilitators, we have workshop organisers from a wide

range of time zones (Canada, USA, UK, China) and will be able to offer almost 24-hour asynchronous interaction from our students and colleagues.

4.3 Provision of Required Tools

All software needed for the online workshop will be provided by the organisations of the workshop through institutional subscriptions to MTeams, Slack, and Miro. For the in-person parts of the workshop, we will require good quality audio and projection along with a reliable internet connection to support the hybrid activities.

5 DELIVERABLES AND OUTCOMES

Accepted submissions will be published on the XAIxArts website¹ initiated in the first workshop alongside links to presentation videos and the XAIxArts manifesto co-developed in this workshop.

¹xaixarts.github.io

The accepted position papers will be collated in an arXiv workshop proceedings as we did for the first workshop proceedings [9].

We will propose an edited book on XAIxArts to Springer’s Cultural Computing series for which the first author Bryan-Kinns is an editorial board member. This proposal will include selected submissions from this workshop and our first workshop along with the XAIxArts manifesto developed in this workshop.

We will explore the potential for proposing a Panel and/ or Special Interest Group at a larger conference, such as ACM CHI, to further build our community and create a wider impact.

The workshop will expand our network of researchers and artists working in XAIxArts. After the workshop, we plan to host further networking events online and also locally within our expanded network. We also plan to build a case for support for networking funding and collaborative research funding addressing core research questions from the workshops to date.

6 WORKSHOP ORGANIZERS

Nick Bryan-Kinns (workshop chair and main contact person) is Professor of Creative Computing at the Creative Computing Institute, University of the Arts London. Bryan-Kinns is a Fellow of the Royal Society of Arts, and Senior Member of the ACM. Bryan-Kinns’ research explores XAI+Music, Interaction Design, and interactive art. Bryan-Kinns has over 20 years experience of organizing and running academic conferences and workshops including the first XAIxArts Workshop at ACM C&C ’23, and is a recipient of both the ACM and British Computer Society (BCS) Recognition of Service Awards for his sustained contribution to conferences and the academic community. He is chair of ACM C&C 2025 and 2026, chaired ACM C&C 2009, (re)Actor3 International Conference on Digital Live Art 2008, and the BCS HCI conference 2006.

Corey Ford is a PhD Student in the AI and Music Centre for Doctoral Training at Queen Mary University of London, UK, within the Centre for Digital Music. Ford is also a student member of the British Computer Society where they volunteer for the Computer Arts Society. Ford’s research explores XAI and Music, reflection, creativity evaluation, first-person methods and human-AI interaction. Ford has previous experience in conference and workshop organization [8, 22] including as the Student Volunteer Co-Chair for ACM Creativity and Cognition 2023 and 2024.

Alan Chamberlain is a Senior Research Fellow at the University of Nottingham, UK, and a member of the Mixed Reality Lab. He is the Creative Industries Sector Lead for the UKRI TAS Hub (Trustworthy Autonomous Systems), he is the Principle investigator of the TAS Responsible Research and Innovation I & II projects and was a Co-director of nTAIL - AHRC Network on Theatre, AI and Ludic Technologies and the EXIoT project - Experimental IoT: Explorations in Sound Art and Technology. He is an interdisciplinary researcher with publications in top tier venues which range from qualitative studies ‘in the wild’ through to lab-based quantitative HCI-based research.

Helen W. Kennedy is Professor of Creative and Cultural Industries at the University of Nottingham, UK. Her research interests are feminist games culture and the wider diversification of access to creative practice; the ludification of cultural experience,

innovations in experience design and the cultural evaluation of immersive experiences. Kennedy has published widely in game studies and the emergent field of live cinema where her work focuses on the intersections between performance, play and narrative in the experience design. She has led a number of national and international projects seeking to improve women’s access to and experience within spaces of creative production – across screens, VR, and immersive technology more broadly. A key characteristic of these projects is collaboration and co-creation with individuals, grass roots organisations and sector advocacy groups. She has been organizing interdisciplinary games and play related conferences, symposia and workshops since the inaugural UK games conference – Game Culture – in 2002. More recently, since 2016, she has been co-convening the industry/academic/artist Live Cinema network events, including Live Xinema in 2022. She has also designed and delivered game jams and VR Hackjams with artists and researchers.

Makayla Lewis is a Senior Lecturer at Kingston University London, researching and teaching User Experience Design and Sketching in HCI with an interest human factors in business, cyber security, smart money, and AI.

Drew Hemment is Theme Lead for Arts, Humanities and Social Sciences in Data-Centric Engineering at The Alan Turing Institute, and Professor of Data Arts and Society at the University of Edinburgh. He is Principal Investigator of The New Real (www.newreal.cc) at The Alan Turing Institute and University of Edinburgh, which has advanced a transformative research agenda and a national platform on AI, Arts and Creativity. Hemment is a Turing Fellow and a Fellow of the Royal Society of the Arts.

Zijin Li received the Ph.D. degree in music acoustics. She is a full Professor with the Department of AI Music and Music Information Technology, Central Conservatory of Music. Her current research interests include music acoustics, music AI creativity. She was committee chair of New Interface Music Expressions (NIME2021), IEEE MIPR/ICME AI Art Workshop, China Sound and Music Technology Conference (CSMT), China Music AI Development Symposium, China Musical Instrument Symposium. She served as the judge of the New Music Device Invention Award of International “Danny award”, International Electronic Music Competition (IEMC) and NCDA Awards.

Qiong Wu is Professor in the Art & Design Academy, Tsinghua University, China. Qiong Wu has rich research and practice experience on interaction design, data visualization, and smart material application design. She published and presented over 40 papers in international seminars and core journals, over 20 of her design pieces have been on display at such important exhibitions as Ars Electronica, the Art and Science International Exhibition, and the China National Art Exhibition. She has also been invited to give presentations at major design seminars, including ACM UbiComp, IEEE DRC, HCI International, the First World Conference on Display Industry, and International Symposium on Cultural Heritage and Digitization. Wu has rich experience of organizing and running academic conferences and workshops such as series workshops at Tsinghua International Conference on Art & Design Education “Re: Actor International Art & Design”, and “Accessible Music Installation Design Workshop”, “Wearable design workshop” held by Tsinghua University. She was Chair of Art Program of the 8th and 9th China Visualization and Visual Analytics Conference (ChinaVis

2021 and ChinaVis 2022), Chair of the Program Committee, International Conference of Digital Media Education 2019, and Co-Chair of the Program Committee Design 3.0 International Forum, 2018.

Gus Xia is an Assistant Professor in Machine Learning at MBZUAI. Gus is interested in the design of interactive intelligent systems to extend human musical creation and expression. His work on controllable music generation and interpretable music representation is well recognized in the domain of Music AI. In 2018, he was the music chair of MuMe workshop at International Conference of Computational Creativity. In the same year, he co-chaired the music session of ISMIR 2018. In 2021, Gus chaired New Interface for Musical Expression, the first NIME ever held in China.

Jeba Rezwana is an Assistant Professor at Towson University, MD, USA. She received her PhD from the University of North Carolina at Charlotte in 2023. Her research interest focuses on Human-Computer Interaction in the areas of Human-AI Co-Creation, Ethical Human-Centered AI, and Interaction Design. Her long-term research goal is to make co-creative AI human-centered, ethical, engaging, adaptable and useful partners that empower users to create novel artifacts, develop skills, and solve complex problems in different creative sectors. She has been a part of the program committee for the HAI-GEN (Human-Centered Generative AI) workshop in the ACM IUI since 2022. Additionally, Jeba has served as one of the associate chairs of the review committees for CHI 2023.

Shuoyang Zheng is a PhD student at the Centre for Doctoral Training in AI and Music at Queen Mary University of London, UK. His works primarily focus on developing software systems that facilitate human-AI co-creation and on the understanding of how these advances in technology impact artistic practices. He is equally interested in the philosophical, ethical, and aesthetical implications inherent to the development of AI.

Lanxi Xiao is a PhD student at the Academy of Arts & Design, Tsinghua University. Lanxi is also a student member of the China Computer Federation. Her research interests include the use of AI as an artistic and design approach, as well as the integration of complex data visualization in art and design. Currently, Lanxi is engaged in the study of explainable AI in art, with a focus on foundation models and CNNs. Through her interactive art installations, she explores the ethical dimensions of AI. Lanxi received her MDes degree in Art and Technology from Tsinghua University in 2023.

Michael Clemens is a graduate student in Human-Centered Computing at the University of Utah. His research interests include human-AI co-creativity, XAI, and musical creativity. Michael has presented at Human-Centered AI workshops and published co-creativity work at venues such as CSCW and ICCBR. Currently, he is exploring the use of explanations to help guide amateur and pro-am music producers when mixing with a co-creative agent.

Gabriel Viglienconi is an electronic music artist, performer, and researcher whose work currently explores the creative affordances of the machine learning paradigm in the context of sound- and music-making. He currently serves as an Assistant Professor in Creative Artificial Intelligence in the Department of Design and Computation Arts at Concordia University in Montréal.

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