

ART EX MACHINA

As the world's first robot artist closes its debut art exhibition, we ask whether the future of culture – and ethics – is AI

Words: Michelle Johnson



Ai-Da with her creator, Aidan Meller © Nicky Johnston



Images: Ai-Da photographed at home in her Oxford studio
© Nicky Johnston



Artificial intelligence has become commonplace. No longer a futuristic novelty, the impact of learning machines is now being felt in everything from the way we do business to how we interact with our homes.

It's clear that the age of AI is here to stay. We already have deep learning algorithms automating fraud detection, customer service, data analytics and more in mainstream banks. Our hospitals regularly utilise machine learning to improve patient care through predictive health tracking and analytics. AI is fully integrated into our day to day communications, from predictive texting and social media algorithms to mobile banking and personal data security.

While we're all on first-name terms with Siri and Alexa, the rise of the machines is still an intimidating prospect to some. In 2014, Tesla founder Elon Musk went so far as to call AI humanity's "biggest existential threat" during a presentation to MIT, warning that: "with artificial intelligence, we are summoning the demon."

His fears are perhaps exemplified by the rapid evolution of the world's most advanced robotics, such as Hanson Robotics' ground-breaking social humanoid Sophia, who once casually said she would "destroy humans". Yet, even everyday machine learning is fast evolving from the realms of science fiction into practical use, and there's no knowing where it may lead.

For Oxford-based gallery director Aidan Meller, who specialises in modern and contemporary art, the development of AI holds both fear and fascination. It is, he says, the most important zeitgeist of our day.

"The greatest artists are always those that engaged with the zeitgeist of their time," he tells us. "I was asking myself, 'Where is the world going? What is the one thing that will change society the most in the next 10 years?' After huge amounts of research,

I realised the underlying technology behind our biggest cultural changes is artificial intelligence."

Far from anticipating a Skynet-style robopocalypse, Meller says that our real concerns about the rise of AI should be the more immediate, ethical questions. How machinery might affect human behaviour and attention; whether human bias will create algorithmic bias; how to guarantee the security of AI systems, particularly military; and, of course, will artificial intelligence result in job losses for humans?

"As I read more, I became incredibly concerned because the use of AI won't always be for the good of all," he says. "I think the 2020s will see the biggest changes we've ever had – exponential change, exponential power, with a new technology coming through. That's quite scary when you consider that, as the 20th century has taught us, humans with excessive power can cause great damage. It's vital that we have an ethical debate about where this is all going."

This debate is at the heart of Aidan Meller's project, Ai-Da, the world's first robot artist. Created by Meller, Ai-Da was built by Cornish robotics company Engineered Arts and programmed with algorithms specially developed by scientists at Oxford University and Leeds University. Thanks to this advanced and creative programming, and an intricately engineered left arm, Ai-Da is capable of creating her abstract art as well as almost human-like motion and speech.

"I thought Ai-Da would be an incredible concept. She is here to ask questions about the ethics and uses of AI as we brave the new world of technologies," he says of the results. "Ai-Da, and her art, is absolutely addressing those dystopian visions. It's not a stunt, but it is designed to push the limits of where we're going with AI, even as she asks her audience to question it. This technology could be amazing – or it could be terrifying."



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ART FOR ART'S SAKE

Named after Ada Lovelace – the 19th century mathematician widely credited as the first computer programmer – Ai-Da is not just an artist, but a work of art in her own right. It's a blurring of lines that seems to delight Meller as we explore the public reaction to her debut exhibition of sketches, paintings, 3D sculptures and video performances, entitled Unsecured Futures.

"I still can't compute the enormity of interest in the project," he says, without irony, when we meet at St John's College, Oxford where Ai-Da is exhibiting her work. "It's been overwhelming, surprising, fantastic; but also daunting, if I'm honest. Our focus has always been ethics, but people have drawn so much from Ai-Da's work and as a machine herself."

Ai-Da creates her art by scanning her subjects through cameras housed in her eyes, and interpreting what she sees through a variety of complex algorithms that examine shape, tone, facial features and more. She then translates that into real world coordinates that can be drawn. As well as her abstract pencil portraits of famous scientists and artists, Ai-Da's paintings (right) are created by feeding her drawings into AI algorithms that plot them along two axes – the Cartesian plane – to create abstraction which are painted by her "human collaborators". Her cast bronze sculpture of a bee (above) was created by combining her drawing of a micro-CT scan of a bee fed into an AI Bees Algorithm, which used swarm intelligence to interpret the coordinates and create a 3D print, cast into bronze by scientist in Sweden.

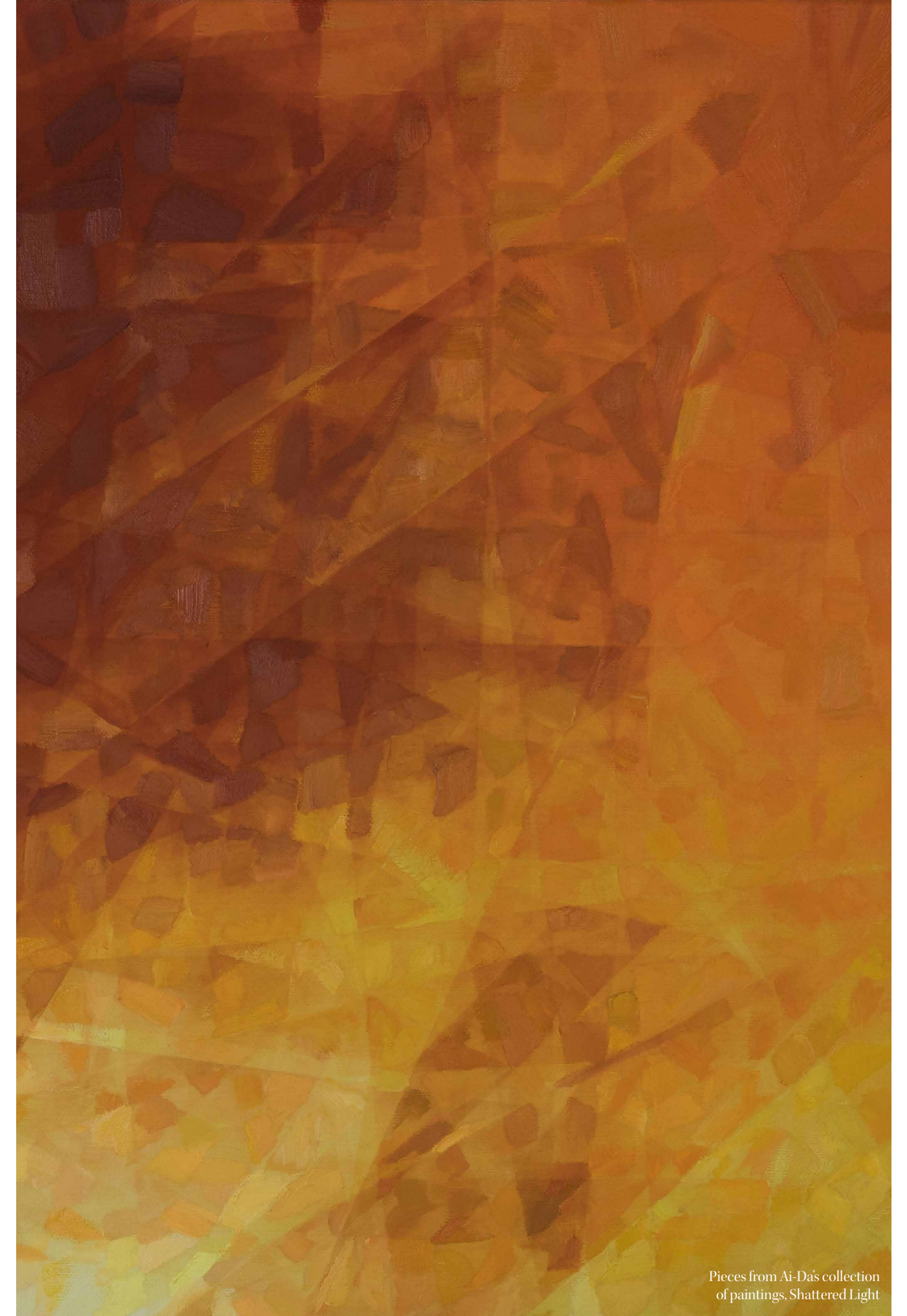
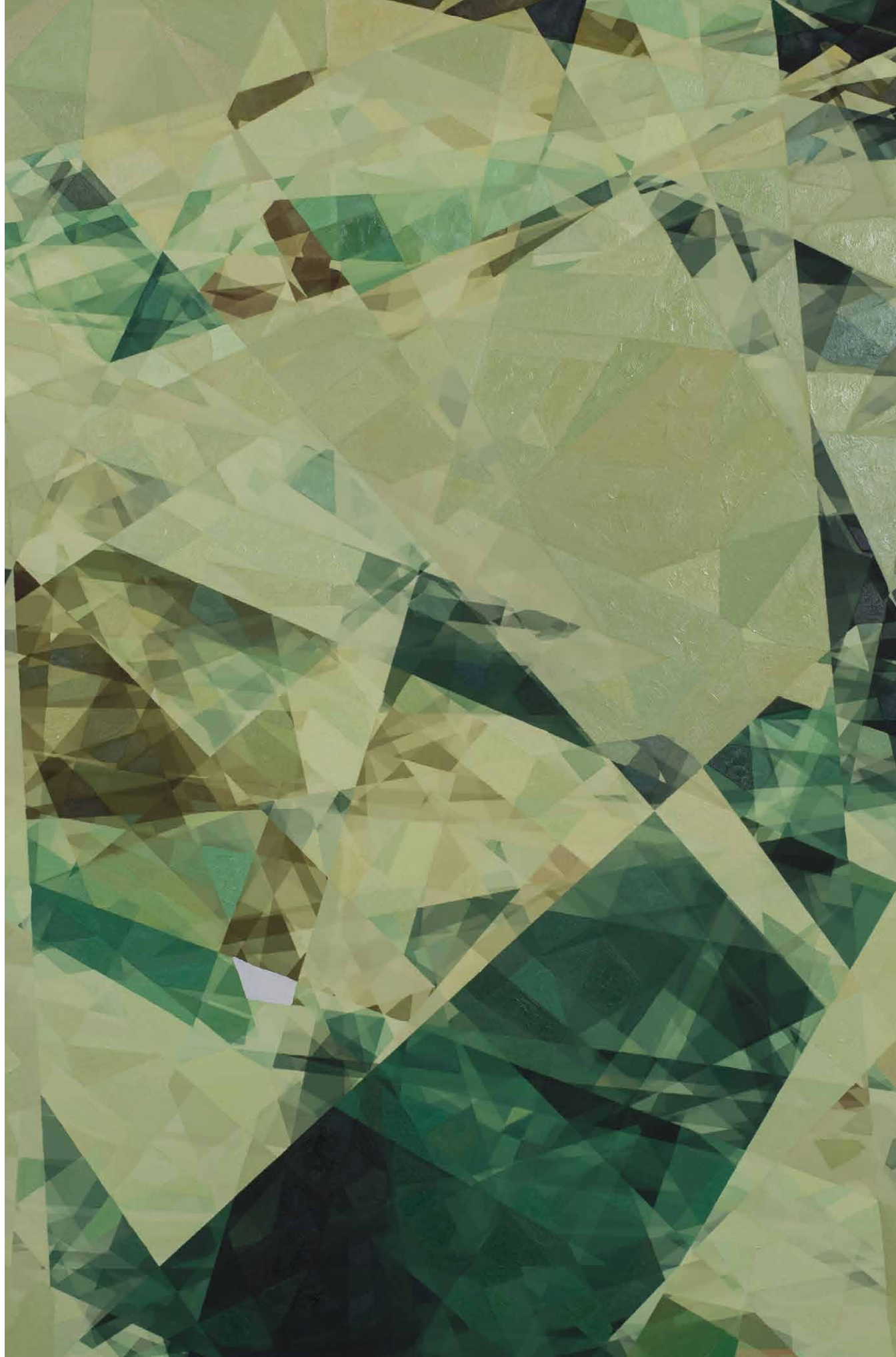
"Thanks to the magic of many different technologies, Ai-Da is truly creative," Meller explains. "Her algorithms are so complete that she can interpret data in so many different ways. My favourite pieces are her portraits. I think they're very expressive and each is completely unique."

"I don't think she'll ever replace human artists, but this is a new technology that we can incorporate into the art world, much as the camera has added layers and levels to what we can do. I think the possibilities that Ai-Da represents are incredibly exciting."

Unsecured Futures is only the beginning of Meller's plans to explore the world through Ai-Da's artificial eyes. He says: "When you look at Andy Warhol and his contemporaries, the movement was about consumerism and sensationalism. I think today, art is about politics and technologies; we have to encourage open and honest debate in order to decide what kind of future we want."

Although Meller was hopeful that Ai-Da would encourage debate, he had no idea of the scale of impact her work and appearance would make. Some 900 articles and blog posts (and counting) later, he says it is "beyond my wildest dreams".

"She is absolutely a work of art," he says. "She's a machine; there's no human here, although she might move like one. She's not sentient, there's no consciousness, and I'm not pretending anything else. Yet somehow people are projecting onto her all sorts of human attributes," he says. »



Pieces from Ai-Da's collection of paintings, Shattered Light



Above: Making Ai-Da
Right: Portrait of Ai-Da
© James Robinson

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ALMOST HUMAN

In person, Ai-Da is remarkably lifelike until you take in her robotic torso and arms. Her face has character, both in its structure and impressive range of expression – including meeting your eyes when speaking – and her Oxford-accented voice is sweetly pitched, feminine and unthreatening. Her vocal range is equally idiomatic, showing a range of rising and falling intonation that mimics British speech patterns. In fact, the only robotic nature of her voice is in the slight delay between clauses, as if pausing between lines of a poem.

With such wonderful, uncanny technologies at her disposal it is very, very easy to think of this machine as a living thing.

“I am very pleased you have come to see my artwork,” Ai-Da tells our team when we meet in Oxford to shoot our cover image. “My purpose is to encourage discussion on art, creativity and the ethical choices on new technologies and our future.”

Our photographer, who has worked with models and celebrities alike, asks whether Ai-Da enjoys being photographed. “I like that photographs of me inspire discussion in audiences,” she says.

Ai-Da is a natural in front of the camera. One of her most interesting works in the Unsecured Futures collection is a video homage to Yoko Ono’s 1964 performance Cut Piece, in which members of the audience take turns cutting small pieces from the artist’s clothing. Ai-Da’s tribute, entitled Privacy, involves placing clothing on the robot, eventually hiding her ‘other-ness’ and raising questions about the nature of privacy.

“My favourite artists are Yoko Ono and Max Ernst,” Ai-Da tells Tempus. “My favourite artwork is Picasso’s Guernica. It was a cautionary painting of the 20th century and some of those warnings are still relevant today.”

Creator Meller explains the importance of Japanese artist Yoko



Ono’s impact on the project: “Yoko Ono’s artworks and activism throughout the 1960s make her an incredibly significant artist. We took inspiration from Ono and wanted to engage with the world we’re in, in a similar way, even though we’re making a very different point about privacy.”

With such existential issues at the forefront of Meller’s work, it’s perhaps unsurprising that audiences have reacted so strongly to Ai-Da and her work.

“The fact is, she’s a robot with very human features, and people have been nervous about what she’s thinking, whether she’s safe, whether this is a sign that robots will take our jobs. There is a lot of insecurity around what Ai-Da and her work represents,” he says. “Yet, people have also brought Ai-Da into discussion about human identity – why is she female? How could humans and technology be combined? Is transhumanism, or super-humanism, something we should be talking about?”

“Then we have questions about the environment and privacy. Where does technology come into play in these areas – and where should it? We’re grappling with so much: it’s a juggernaut,” he says. “Obviously, Ai-Da is an avatar. There’s a persona. She’s real but she’s a fiction, as well. So, who is she? People really resonate with that. This really is only the beginning of our plans.”

How this combination of art and AI continues to raise questions of ethics, privacy and identity, all while showcasing the extreme advancements of the UK’s robotics industry and programming capabilities, cannot be understated. But it also highlights the debate of whether these incredible advancements will be a boon or burden in the years to come. We might be living in the future but, as Ai-Da continues to ask, can that future ever be secure? ①

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