# Better Images of AI A Guide for Users and Creators

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**Citation** Dihal, K., and Duarte, T. (2023). Better Images of AI: A Guide for Users and Creators. Cambridge and London: The Leverhulme Centre for the Future of Intelligence and We and AI.

Acknowledgements We are grateful to members of the Better Images of AI collaboration for their initial work on the project which laid the groundwork for this guide, including Alexa Steinbrück, Buse Çetin, Merve Hickok and Patricia Gestoso. We and AI manage the wider Better Images of AI project and website. BBC R&D provided research, images and web development for the wider Better Images of AI project. We are also grateful to the advocates of the Better Images of AI project who have supported the call for better images and showcased possible solutions.

Our special thanks go to the research project team: Dr Stephen Cave, Tristan Ferne, David Man, Lauren Webb, Marc Goblot, and Nicholas Barrow. We also thank Dr Tomasz Hollanek for reviewing the guide, Mark Burey and The Alan Turing Institute for generously hosting the launch reception of this guide, and offering a space to us for one of the research workshops. We gratefully acknowledge the artists who have contributed images under a Creative Commons licence for the Better Images of AI library and research project.

Most importantly, we extend our gratitude to the participants of the roundtables and workshops organised as part of the research project Better Images of AI: Research-Informed Diversification of Stock Imagery of Artificial Intelligence, without whose insights and inputs this report would not have come into existence.

**Funding** This publication was made possible through the support of a grant from the UK Arts and Humanities Research Council to the University of Cambridge, grant ref. AH/W007673/1.

Dr Kanta Dihal is additionally funded by the Leverhulme Centre for the Future of Intelligence, Leverhulme Trust, under Grant RC-2015-067, and by Stiftung Mercator.



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## **Executive Summary**

Stock images – images collected in special databases for wide and generic use – strongly influence the ways in which non-expert audiences think about and understand the topics they illustrate. This is why it is worrying that research has repeatedly shown that many stock images of artificial intelligence (AI) are misleading.

This guide presents the results of a year-long study into alternative ways of creating images about AI, involving roundtable and workshop conversations with over 100 experts from fields including the tech sector, media, education, research, policy and the arts. Its aim is to advise people who work with images of AI – from journalists to communications officers, from educators to activists –on sourcing or creating the best images for communicating accurately and compellingly.

We start by explaining why the currently available range of stock images of AI is inadequate. The use of misleading images hinders people's understanding of real technological developments; damages trust in systems as their impact is misunderstood; creates fears of technologies that do not exist while keeping people uninformed about existing threats; and reinforces existing stereotypes about the technology and who makes it. We recommend considering the following criteria when choosing or creating images of AI:

**Honesty** Showing accurately what the technology can do, and nothing more.

**Humanity** Not depicting AI as human-like, but showing people working with AI technology.

**Necessity** Not using images of AI when the story they illustrate is not about AI.

**Specificity** Using images that are specific to the type of technology or impact being discussed.

The guide concludes with a list of topics and areas in which our roundtable and workshop participants identified a lack of useful images, including images that: involve people; are aimed at children; represent the present state of technology; represent specific AI technologies including biometrics, image recognition, and classification; and are more inclusive and representative.

### This guide outlines elements to avoid in choosing or creating images of AI:

- The colour blue
- Descending code
- The human brain
- Science fiction references
- White robots
- White men in suits
- Anthropomorphism
- Variations on The Creation of Adam



## Introduction

Think of an image of AI you have come across recently. Did it feature any of the following?

- A robot that looks like a human
- A glowing brain
- The Terminator
- Michelangelo's The Creation of Adam with a robot hand
- An overabundance of the colour blue

If this is the case, it is because stock images with these features have been dominating public communication of AI, from book covers to news stories to policy reports. If your work concerns AI in any way you might simply be tired of these overworked stereotypes. But what is more worrying is that these kinds of images can seriously mislead non-experts about the nature of AI:

- Abstract, futuristic or science-fiction-inspired images of AI hinder the understanding of the technology's already significant societal and environmental impacts.
- Images that relate machine intelligence to human intelligence, for example through representing AI as a mechanical brain, set unrealistic expectations and misstate the capabilities of AI.
- Images representing AI as sentient robots mask the accountability of the humans actually developing the technology, and equate AI with robotics.
- Threatening images of androids with guns sow fear about Al in general, but also mislead audiences' expectations of what lethal autonomous weapons look like.
- These images tend to be laden with stereotypical, and potentially discriminatory, assumptions about gender, ethnicity and religion.



Screenshot of the Better Images of AI free image library https://betterimagesofai.org/images

Research shows that non-experts tend to misunderstand what Al is, equating it with robotics or referring to science fiction portrayals of androids, rather than as a range of physical and digital technological approaches that process, synthesise, and make inferences from large amounts of information.<sup>1</sup> This is a worrying finding, as AI technologies have become a widespread and highly influential, yet mostly invisible, part of our lives. People who do not understand what AI is, are unable to advocate for the ways the technology should or should not impact society.

The Better Images of AI project and database, launched in 2021 to curate, commission, and advocate for alternative images that better represent the current state of technology.<sup>2</sup> In 2022 its project team convened four roundtables to investigate the needs and wants of image users – including journalists, academics, marketers, communicators, artists and those in the technical community – and four workshops to investigate potential approaches to filling these needs, funded by the Arts and Humanities Research Council (AHRC). Based on these meetings, we have created this resource: a concise reference tool filled with key considerations that should be front of mind for anyone using or creating images of AI.

 Cave S, Coughlan K and Dihal K (2019) 'Scary Robots': Examining Public Responses to Al. In: Proceedings of the 2019 AAAI/ACM Conference on Al, Ethics, and Society, New York, 2019, pp. 331–337. AIES '19. ACM. DOI: 10.1145/3306618.3314232.

Centre for Data Ethics and Innovation (2022) Public attitudes to data and AI: Tracker survey (Wave 2). November. Available at: https://www.gov.uk/government/publications/ public-attitudes-to-data-and-ai-tracker-survey-wave-2.  Ferne T, Grandjean A, Man D, et al. (2021) Better images of Al. In: BBC R&D. Available at: https://www.bbc.co.uk/rd/blog/2021-12-artificial-intelligence-machine-stock-imagelibrary (accessed 12 January 2023).

# Why do we need better images of AI?

Artists and communicators are well aware of the power of images. They can inform, inspire, draw attention, or simply entertain. Images that are misleading or inaccurate are equally powerful, but with potentially damaging consequences: they can misinform, limit the imagination, or divert attention from pressing issues. Our roundtable and workshop participants identified the following as the most important reasons to create and use better images of AI.

#### To reduce stereotypes

Disproportionately few women and ethnic minorities work in AI. The way in which AI is shown to people on an everyday basis plays a huge role in this: seeing images, interviews, and films featuring only young white men as the people who build AI discourages underrepresented groups from joining the workforce, and discourages people within the workforce from recognising the contributions members of such groups could make to their teams.

Current stock images of AI often do not feature members of these underrepresented groups, and often even the AI itself is depicted as a white male robot – or as a white female robot to depict AI in a stereotypically female profession such as nursing. Providing alternative images will reduce the frequency with which people are confronted with such stereotypes and make sure they become less entrenched. "For me it's not about the Terminator, it's about sexualized images of women. I think often AIs are shown as females... I don't think we're doing a good job in terms of the images we're portraying about AI, or generally in computer science. But I think AI particularly is very negative in terms of the way that it sexualizes the topic." **Computer science education researcher, Roundtable 2** 

#### To improve understanding

Sometimes a picture does indeed say more than a thousand words – and when trying to learn something new, any thousand words will come across much more clearly when accompanied by a picture. Images can dispel misconceptions and misunderstandings, and so improve critical thinking and informed decision-making. This in turn will lead to betterinformed engagement with AI. Roundtable participants noted that images are especially useful when catering to an audience that includes a wide range of types of learners, particularly visual learners.

#### To build trust

Informed decision-making is essential for building trust between those who build the technology, those who regulate and deploy it, and those who use it or are affected by its outcomes. Showing accurately and honestly what a new AI technology looks like, what it can or cannot do, or how it might affect one's personal life helps in this regard, whereas images that are disproportionately scaremongering or unrealistically futuristic will lead to either hype followed by disappointment, or misplaced fear followed by outright rejection.



#### Who needs better images of AI?

Our workshop and roundtable participants identified the following as the most important groups in need of better images of AI:

#### AI professionals

Researchers and engineers in academia and industry; AI ethics researchers

#### **Policy experts**

#### Educators

Teachers; course designers; authors and editors of educational resources

"For my personal use: scientific articles in HCI, I struggle to represent AI/ML. I'd like icons for different models."

Human-Computer Interaction researcher, Workshop 2

#### Media professionals

Journalists; editors; producers; content managers
Activists

Designers

"It's helpful when I'm working visually to see good examples... Pulling a vision out of your brain and... getting it right, is, like, virtually impossible unless we're working on things that we visually recognize." Visual artist, Roundtable 3

#### **Communications professionals**

For startups; research institutes, academia and think tanks; technology companies; industries that use AI, e.g. healthcare, financial services

"These days the images that you find about AI are pretty generic. They almost all involve... a spark and some binary text in the background, and something that looks like a robot. And so I end up using those but that doesn't mean they're right." Journalist, Roundtable 3

# Why do we consider some images of AI to be unhelpful?

#### Scary images put people off AI

The use of inaccurate images of artificial intelligence can be intimidating to people outside of the space – for people who do not have a clear understanding of AI, some of the images used to illustrate AI technologies create a picture that can appear disturbing, dystopian and create a culture of mistrust or worry about AI.



## Exaggerating capabilities sets wrong expectations

Many of the current images of Al create the wrong expectations of the capabilities of technology around artificial intelligence. Bad imagery will exaggerate the possibilities or scope of what the technology is capable of, overselling it and creating a disconnect between the reality and how it is viewed by wider audiences.

"The representations of AI tend to oversell its capabilities. [...] If people's expectations of how it works are wrong, that makes for bad interaction."

Academic, Roundtable 1

## Lack of representation and diversity amplifies inequalities



An ongoing issue with images of AI is the lack of representation and diversity - there is an imbalance in visual representation. This means it can be hard to find images that represent other global views from outside of Europe and the US, and that it is challenging to find images of AI that incorporate representation for people of colour, women and other unrepresented societal groups.

"We always use some waveforms and similar kinds of images in different colours and I always feel like, it's not really passing the message that we want to talk about when we talk about diversity and inclusion" Founder of an Al company Roundtable 1

"AI is always scary and always separates us from the people we're trying to communicate with. [...] [The] imagery is not fit for purpose in the sphere that we use." CEO of an AI company Roundtable 1 "Visuals that are currently available to the wider public are not representative of AI and are harmful and misinterpret AI" Visual designer at an AI company, Roundtable 1 "I go to some of those industry talks or panel discussions and so on, every time I see the same kinds of images repeating in each of those" Founder of an Al company, Roundtable 1

# Lack of realism impedes recognition of AI in lived experience

Al can be a huge part of people's day-to-day lives, and helping people to understand this can be positive. There are not enough images which show the audience's lived experience, allowing them to understand the reality of Al technologies in their lives. Bad images do not support this view of people's lived reality and create unhelpful stereotypes.

"we find the images that tend to represent [biometric technologies or public sector uses of data and AI] unhelpful, because [these] techno-privileging representations are actually unrepresentative of the reality that all of us live in [...] they tend to obfuscate the real issues that affect real people and communities"

Al impact and research practice expert, Roundtable 1

## Limited tropes and choice limit the imagination

The worldview of most people is affected by many outside factors, and the images they see are a part of those external influences. By limiting their understanding of AI through poor image availability, we are limiting their imagination to understand the capabilities and influences of the technology.



"[People are] quite limited by their own imagination, which is influenced by all of the images that they are already seeing." Artist, Roundtable 4



# Why are unhelpful images of AI used so much?

#### Lack of awareness of issues

Some respondents were not aware that images they were using were inaccurate or uninclusive. This could be due to a lack of knowledge about AI or about representation. Because of their ubiquitous use, some had not considered the possibility that their images were harmful as they considered their being mainstream as an indication of their legitimacy.

### Not knowing what images would be better

Some users have used images which they know to be unhelpful, but without being entirely sure why these images might be problematic, or knowing what might be a better alternative. The Better Images of AI website list of research and blog is seen as very useful to this group in terms of helping them to be more confident and informed about how to improve their communication, in addition to the actual library.

#### Finding better images is difficult

Many participants in the roundtables and workshops are in some way aware of the issues around unhelpful stock images, and some even directly criticised the images they themselves have had to use in the past. However, they have not found a way to meet their communications requirements and objectives without having to default to the dominant tropes.

"we definitely struggle to find images that aren't these sort of horrendous overlays of blue neon"

### Al impact and research practice expert, Roundtable 1

"We often find that the content available to us really is focused around the idea of imagined futures rather than of lived experience. So the content that we have available to us is often quite narrow." Video journalist for a national news outlet, Roundtable 1

#### **Audience familiarity**

The ubiquity of unhelpful stock images of AI has created a paradox: these images have started to become so recognisable as a shorthand for AI, especially for nontechnical audiences, that image users are reluctant to use images that are more accurate but may not immediately evoke this association.

#### **Time pressure**

Some respondents who use images they acknowledge to be problematic do so due to time pressures, particularly those relating to news, media and content publishing. In the case of media, publishing first is sometimes a competitive advantage, publishing schedules are deadline driven, or the volume of content expected requires that it is produced very quickly. Spending time searching multiple places for alternatives, thinking creatively about how to use different keywords, or indeed thinking in any depth about the image accompanying is not compatible with the business model.



Results on 16th Jan 2023 for the Google Image search for Artificial Intelligence

"Editorial often have less than one minute to choose an image." National media UX designer Roundtable 4

Where respondents source their images

(In order of popularity)

- Made in-house
- Getty Images
- Unsplash
- Google search results
- iStock
- Shutterstock
- Freepik
- Pexels
- Flickr

# Guidance for choosing and creating better images

So what makes an image a 'better' image of AI? From our workshop and roundtable discussions, we have distilled four principles: honesty, humanity, necessity, and specificity.

#### Honesty

### Does the image show what the AI system can actually do, and nothing more?

In the words of one of our roundtable participants, depictions of AI need to be 'humble and honest'. This means representing the technology in a way that as accurately as possible shows what it can do, without extrapolating into an unlikely future. For example, an illustration of medical AI should not look like a humanoid robot with a stethoscope, because no such technology currently exists, or is likely to be created in the future.

"try and manage people's expectations in terms of what, realistically, AI and data science can achieve in the shorter term, but also to provide a way that is a balance between being intriguing but being kind of honest with the audience"

**Communications officer, Roundtable 1** 



3. Shneiderman B (2022) In: OUPblog. Available at: https://blog.oup.com/2022/03/ behind-the-cover-visualizing-human-centered-ai/ (accessed 30th January 2022)

#### **Humanity**

#### Does the image show that AI is created by and for people?

Al is technology created and used by humans, not technology that looks and acts like a human. This is why, instead of depicting Al as people, images should show what people can do with Al. Images should include people representing the many groups involved in the development and deployment of Al, including software engineers, data labellers, and of course end users. A participant noted some existing thoughts given to criteria for representing humans, with examples.<sup>3</sup>

"with ... AI, it's really important that we try and show the truth, which is: the human is always in the loop and ... it's part of, you know, integrating it into [the audience's] worlds. It's not some sort of fiction thing."

Journalism professor, Roundtable 2

#### Necessity

#### Do you need to show an image depicting AI?

Our participants argued that it is not always helpful to focus on illustrating the AI element of the story rather than other elements. A publication about AI in agriculture, for example, should rely as much on agriculture imagery as on AI imagery – and blending the two will lead to visuals that are much more captivating, original, and accurate than existing generic stock images of AI.

#### Specificity

#### What kind of AI technology are you showing exactly?

'AI' can mean many things, and encompasses many technologies. Images should be specific to the type of technology, application, or impact that is being discussed. Many types of AI are represented with generic android images where in reality no robots are involved.

## Tropes to avoid

Beyond being over-used and clichéd, why exactly should we avoid the well-known tropes used in images of AI? This section highlights the eight most common features of stock images of AI and explains the problems with each.



**Science fiction references** 

Twentieth century science fiction has shaped people's expectations of what AI is, or will soon be, more than any single existing technology. Stock imagery both makes use of general science fiction tropes such as flying cars, spaceships, and of course robots, and at times borrows heavily from specific science fiction films and games such as *The Terminator, 2001: A Space Odyssey,* and *Minority Report.* 



These images are usually explicit references to the *Matrix* films (1999-2021). On the one hand, they refer to a dystopian science fiction scenario in which humans are enslaved by AI. On the other hand, to those for whom the link to these films is not clear, the images can be alienating by presenting AI as a wall of incomprehensible symbols.



In the Global North, the colour blue has been associated with progress, and particularly technological progress, since the nineteenth century. However, it also has connotations that are not always desirable in the context of AI: blue can also be seen as male, clinical, and distant, and using the colour nudges people towards acceptance and resignation.<sup>4</sup>



White robots

Depicting AI as robots that are white in colour, ethnicity, or both, associates intelligence with being white. Such images serve as a barrier to increasing racial and ethnic diversity in AI development and decision-making, and exclude the global majority.<sup>5</sup>



White men in suits

This trope reinforces stereotypes about the kind of person who is in control of AI. Aside from its obvious gender and race connotations, it excludes all those involved in AI who do not feel represented by suits, including developers, data labellers, and rare earth miners. These images focus on power, not the impact or applications of AI.



Anthropomorphism

Anthropomorphising AI (making it look like a human) masks the agency and accountability of those who have made the AI system, by suggesting that AI acts independently and of its own free will.<sup>6</sup> Even when a robot runs on AI technology, such as robots that integrate object recognition, the robot tends not to look human at all. Images of humanoid robots can also sow misplaced fears about AI overthrowing or replacing humans. Making AI look like a human also means assigning gender and ethnicity to it, which leads to stereotyping.

Pictures that show humanoid robots in deep contemplation, or tackling difficult maths problems on a blackboard, reinforce unrealistic fears and expectations about AI achieving human-like intelligence, or even 'superintelligence', imminently. This overshadows current concerns about AI and overhypes present capabilities. AI does not 'think', it is a programme executing algorithms.



#### The human brain

Although a very small part of AI research attempts to reconstruct the human brain in electronic form, generally AI and human brains have very little in common. Equating the two misleads people into thinking that machines can, or will soon be able to, do anything a human brain can do. In fact, AI technologies are highly specialised.



Variations on The Creation of Adam

Based on Michelangelo's religious fresco *The Creation of Adam* on the ceiling of the Sistine Chapel, use of this composition of touching hands makes AI seem mystical and unknowable. It reinforces narratives of AI as a god-like technology, denying human agency and control, and meanwhile elevating the AI developer to divine status.<sup>7</sup>

- 4. Romele, A. Images of Artificial Intelligence: a Blind Spot in AI Ethics. Philos. Technol. 35, 4 (2022). https://doi.org/10.1007/s13347-022-00498-3
- Cave S and Dihal K (2020) The Whiteness of AI. Philosophy & Technology. DOI: https://doi.org/10.1007/s13347-020-00415-6.
- Bryson J (2018) The Moreal, Legal, and Economic Hazard of Anthropomorphizing Robots and Al. In: Coeckelburgh M, Loh J, Funk M, et al. (eds) Envisoning Robots in Society – Power, Politics, and Public Space. IOS Press, pp. 11–11. Available at: https://ebooks. iospress.nl/doi/10.3233/978-1-61499-931-7-11.
- 7. Singler B (2020) The AI Creation Meme: A Case Study of the New Visibility of Religion in Artificial Intelligence Discourse. Religions 11(5). DOI: 10.3390/rel11050253.

## What new images of AI do we need?

The Better Images of AI library, which currently contains just under 30 images, provides a useful starting point for exploring better representation – but this small set of images is not enough to cover the vast range of communication needs, in fields that include technology, business, society, governance, and human impact. The need and scope for more images is vast.

Our roundtable and workshop discussions identified specific needs expressed by different image users. We identified the following gaps in the current range of available images of AI.

#### **Images for children**

It is particularly important to take care to explain AI to children responsibly. Not only are children's lives increasingly affected by AI, they are also the ones who may one day end up designing radical new technologies themselves. There is currently a lack of images of AI that appeal to children, or that use references and metaphors that speak to them.

"what I hadn't seen... I had not been able to conceptualise what an illustration for an 'African women in AI' report would look like [...] I basically drew a blank. I couldn't think of anything beyond brains and neurons and blue." Researcher from Nigeria, Roundtable 4

#### Icons

In some cases, a photograph or similar artwork can be too large, complex, or detailed for the context in which it is needed. Icons and pictograms can be helpful in publications ranging from education to government communications. Existing icons, however, tend to be limited to pictures of computers or robots.

#### **New metaphors**



Al is a highly complex technology, and metaphors can be extremely helpful for getting across complex concepts more easily. But as we noted earlier, some of the most-used metaphors around Al, such as 'brains' or 'thinking machines', can be misleading. We need new metaphors, for Al in its broadest sense and for its specific applications.

#### People



Several of our workshop and roundtable participants noted that they have to follow guidelines that recommend that images should have people in them. Showing people using or creating AI technologies is at the same time a helpful way of showing what the technology is currently capable of.

#### Social media



Many people have heard about the algorithms that run social media, and in many cases shape users' everyday experiences. But there is a need for more images that show this side of social media, to better illustrate communications and news coverage.

#### **Material reality**



Creating an AI system requires a vast range of resources. This includes the material resources consumed in the life cycle of devices ranging from supercomputers to smartphones, but also the human resources - the people involved in programming, training, and modifying the AI system. We need more images that demystify AI by showing the resources involved.

#### **Nature and climate**



Al tends to be depicted in clinically clean, white, indoor, laboratory-like settings. Its many applications in the real world, including in farming, wildlife monitoring, and drone surveillance, tend to be underrepresented.

Participants identified a particular need for images related to AI and sustainability.

#### Kinds and applications of AI

'AI' is a term that encompasses a vast range of applications and methods. Workshop participants identified a range of specific applications of AI for which more images are needed:

- Software
- Data
- Natural language processing (NLP) and speech recognition
- Image recognition and machine vision
- Prediction
- Classification
- Biometrics
- Generative models:
   Al-generated text and images, such as ChatGPT and DALL-E

#### The present

Many existing images of AI are futuristic, usually in a misleading way that sketches out a future we are likely to never actually inhabit: it is highly unlikely that AI in courtrooms will look like a white plastic humanoid robot wielding a gavel. There is a lack of two kinds of images that represent our present lived reality.

- Positive images, which show humans having agency and being in control of the technology, as opposed to being threatened or marginalised by it.
- Negative images, which show downsides of current AI technologies, such as human rights implications.

#### **Diversity and inclusivity**

Many of our participants struggled particularly with identifying images that represented the audience they were addressing. Very few stock images of AI represent women or people from outside the Global North.

'[I would like to see] inclusivity in context and content"

Participant, Workshop 2

"Images that regionally represent issues, or regionally represent context better"

AI ethicist from India, Roundtable 4

#### **Relations to other technologies**

Al is frequently deployed in combination with other technologies. Some of these technologies, such as robots and drones, are widely represented. However, there are many other technologies, such as facial recognition cameras, health monitors, and smart appliances, of which there are not enough images available.

> "AI and other areas of future tech that maybe don't have a physical device, how do we represent them better?" UX designer for a national

# About Better Images of AI

Better Images of AI is a non-profit collaboration of organisations and individuals working together to inspire and make freely available more realistic, specific, and inclusive images of AI.

Better Images of AI explores how to imagine and create more helpful visual representations of AI through the following methods:

- Pooling the experience and expertise of a wide range of relevant stakeholders
- Researching requirements and approaches for creating 'better' images
- Curating and commissioning 'better' images
- Developing methodology for briefing and originating 'better' images
- Showcasing 'better' images and the approaches used to create them
- Stimulating debate around perceptions of AI

Within our first year, our images have been viewed several million times and we've spotted them in international, national, tech, trade and news media. They've been used in *The Washington Post* for articles about the myth of AI sentience and the metaverse, in *TIME* to illustrate a story on text-to-image generation apps, in *The Independent* for articles on DeepMind, and in *The Verge* on OpenAI's ChatGPT.

Our images have been adopted by many academic institutions to illustrate their events, courses, research, websites and blog posts. They have been widely used by many national AI institutes, responsible AI research institutes and think tanks. It's critical that educators and researchers lead the way with responsible communication, so helping with this is very important to us.

We've also seen our images being used by AI startups, consultancies and many independent bloggers and writers. Some users have tailored them using editing and layering, and with a relatively small number of images, it's been great to see the different creative interpretations and treatments they have been given.

Find out more: www.betterimagesofai.org

## About the authors

#### Dr Kanta Dihal

Dr Kanta Dihal is a Senior Research Fellow at the Leverhulme Centre for the Future of Intelligence, University of Cambridge. Her research focuses on science narratives, particularly those that emerge from conflict. She currently manages the project 'Desirable Digitalisation', an international research collaboration that investigates intercultural perspectives on AI and fundamental rights and values. She is co-editor of the books AI Narratives (2020) and Imagining AI (2023) and has advised the World Economic Forum, the UK House of Lords, and the United Nations. She obtained her DPhil on the communication of quantum physics at Oxford in 2018.

#### Tania Duarte

Tania is Co-Founder and CEO of We and AI, and coordinates the Better Images of AI project. She is on the Founding Editorial Board for the Springer AI and Ethics Journal, and on the Public Engagement and Ecosystem Strategy Advisory Board of The Alan Turing Institute. She is a member of the IEEE P7015 Data and AI Literacy, skills, and readiness working group, and was named one of WIAIE's 100 Brilliant Women in AI Ethics 2021. Tania is also a Lead for Tech London Advocates Tech for Disability and a Fellow of the Royal Society of Arts.

## Get involved

The Better Images of AI library launched in December 2021. Since then, we have encountered a high level of demand for new images and advice which we are not funded to satisfy. This is particularly the case for more images and inspiration from the Global South. If you can get involved or simply spread the word, it will help us to keep providing free insight and images to reduce damaging misconceptions about AI. These are a few examples of how to support us and the mission for better visual communication of AI.

#### **Sponsor commissions or competitions**

As we outline on p. 12-13 of this report, our research and feedback from image users has given us insight into a wide range of opportunities for the creation of further images. Our network also includes amazing creative professionals who can address challenging briefs. We are looking for organisations and individuals to collaborate with on commissions or design competitions for sets of images tailored to the needs of a specific organisation, campaign, or stakeholder group.

#### Fund our image library

As a resource that is available entirely for free, the Better Images of AI library requires funding to cover its annual running costs, as well as funding for the work involved in curating, uploading, and editing images, and liaising with our contributing artists. We are seeking aligned core funders to help us cover these costs.

#### **Donate existing images**

If you (or your organisation) already have images that would fit well in our library, consider donating them for wider use. Our images have been viewed by millions of people worldwide, and the Creative Commons licence ensures that artists and organisations are always credited.

#### Spread the word

Do you know journalists or communicators who could benefit from our research, insights, or images? Send them our way – and share this guide! We would also love to hear from you where our images are being used, and to hear about new images from other sources that fulfil our mission. If you have experience or thoughts related to this area, you might also consider writing for our community blog at **blog.betterimagesofai.org** 

#### Volunteer skills

The Better Images of AI project is driven by volunteers with skills such as writing, web development, creative skills, project management and grant writing. If you like exploring where technology, communications, society, and art meet, get in touch!

#### Our key partners

#### **BBC Research and Development**



BBC Research & Development develops new technology for the BBC in broadcast and online media. It has over 200 research engineers,

developers, designers and producers across two labs and works on many aspects of media production, distribution and consumption.



#### We and AI

We and AI is a Non-Profit Company Limited by Guarantee. Our mission is to assure a greater diversity of

perspectives are represented in the development and use of Artificial Intelligence (AI), as a way of ensuring its use is held accountable and in the public interest. We undertake activities to facilitate a better awareness and understanding of the applications and impact of AI in people's lives, particularly those most marginalised. These include creating the Race and AI Toolkit, conducting grassroots AI workshops and education, and public AI literacy and communication consultancy.

#### Leverhulme Centre for the Future of Intelligence

CFI LEVERHULME CENTRE FOR THE FUTURE OF INTELLIGENCE The Leverhulme Centre for the Future of Intelligence is an interdisciplinary research centre addressing the challenges and opportunities posed

by AI. Funded by the Leverhulme Trust, and based at the University of Cambridge, LCFI has research partnerships with University of Oxford, Imperial College, and UC Berkeley, and close links with industry and policymakers.

#### **Founding Supporters**





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