We Are AI: Taking control of technology
We are AI #5: We are AI

Cover-alt

Picture a large “AI-tree”: the leaves are composed of a large network/graph – with colorful and densely interconnected nodes and edges. The roots of the tree span a large area underground, where a group of humans are holding on to the roots, and “grounding” the tree. The humans are drawn in abstract line art, and are only identifiable by a silhouette. They are in a variety of colors.

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In this volume, we will revisit some of the key concepts from the comic series, reinforcing the idea that technology - including AI - is what we want it to be.

WE are AI.

We pondered several hypothetical and real-world uses of AI-including an algorithm that learns to bake, a smart light, a chess-playing AI, a self-driving car, and an automated hiring system.
A woman holds an AI-puppet by the strings – she is moving the strings which makes the AI-puppet dance. The AI-puppet itself is holding 6 different strings. The strings end upon snapshots of different applications of AI – self-driving car, an automated lighting system, a chess-playing AI and an automated hiring system.

Of the examples listed here, the automated hiring system is perhaps the most controversial,
and it's also a topic that we've discussed extensively, so let's revisit it briefly.

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In their 2018 report called "Help Wanted", Miranda Bogen and Aaron Rieke described the hiring process as a funnel - a sequence of data-driven algorithm-assisted steps, in which a series of decisions culminates in job offers to some candidates, and rejections to others.

From sourcing candidates through online job postings,
Sourcing
Screening
Interviewing
Background Check
Offers
to assessing candidates' experience, skills, and characteristics.

And finally, making hiring decisions - usually including background checks, and determining an appropriate level of compensation.

An embodied-AI/robot holds up a large red funnel. A diverse group of humans fall through the top of the funnel. On the outside of the funnel we see the different steps that are filtering applicants out: from top to bottom: “Sourcing” and a magnifying glass, “Screening” with two ticks and two crosses, “Interviewing” with the scene of a woman sitting and chatting with an AI, “Background check” with the photograph of a woman and a biometric print next to it. Two people are falling out of the bottom of the funnel. Along with them a wave of money/notes are flying around.

Importantly, data and predictive analytics - that we have been casually denoting “AI” - are used during all of these stages.

As stated by Jenny Yang, former commissioner of the US equal employment opportunity commission (EEOC),
A caricatured Jenny Yang smiles at the reader
because of the importance of the decision they make or help make,
“automated hiring systems act as modern gatekeepers to economic opportunity.”
[1] Help wanted: an examination of hiring algorithms, equity and bias. (2018) Miranda Bogenand Aaron Rieke.

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We have seen examples in which these tools reinforce gender and racial bias.

Automated hiring systems also limit access to jobs for individuals with disabilities - shutting out people suffering from mental illness such as depression or bipolar disorder, on the basis of online personality tests, even if they have the right skills for the job.[2]

[2] Are Workplace Personality Tests Fair? (2014) The Wall Street Journal.

A woman sits at her laptop. A wave of abstract art in the shape of squiggles flies out of the laptop. Behind her is a large human face, with the brain drawn in similar colorful squiggles. Two embodied-AIs/robots are examining the brain – the one on the left is holding up a magnifying glass and looking at one area of the brain. The robot to the left is using touch to sense around the front of the brain and decipher qualifications

We are also often worried about whether these tools actually “work" -
whether they are picking up useful signals from the data
or are an elaborate coin flip at best.

As Arvind Narayanan, professor of computer science puts it: [3]
A caricaturized Arvind Narayanan, with his arms crossed in front of him, smiles at the reader.
Are these tools AI snake-oil?

[3] How to recognize AI snake oil. (2019). Arvind Narayanan

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AI tools are engineering artifacts.

To know whether they work we should use the scientific method:
formulate a hypothesis that states - in a falsifiable way - that the tool indeed selects employees who do well on the job, and is better at predicting than a random guess would be.

Then, design an experiment to check this hypothesis, and be prepared to accept that the tool doesn’t work based on the result.

First, our protagonist is dressed up like Sherlock Holmes – she holds up a magnifying glass, keenly observing the screen. Next, the protagonist comes up with a hypothesis – she sits contemplatively, with both her hands crossed on her mouth and her expression severe. Next the protagonist conducts the experiment: she holds two beakers on top of a large pot and frantically pours their contents into the concoction below, with an expression of anticipation. Finally she makes a conclusion: here we see her having a “Eureka” moment – one of her hands is on her lips, while the other points upwards in the air.

In the complex ecosystem in which automated hiring tools are commissioned, developed, and used, we must ask ourselves:
Who is responsible for ensuring that these tools are built and used appropriately?

Who is responsible for catching and mitigating discrimination and due process violations?
And for controlling the proliferation of snake-oil under the fancy label of “AI”?

We see the line-up of algorithmic culpability – (from left to right) Tech billionaire Mark zuckerberg, the tech product: a black android with the “Google” logo on its face, the scientist: Albert einstein, the corporate: a woman in a power suit, and the general public:a young man in a hoodie and jeans

The answer is - We All Are.

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In response to these questions, we’ve been seeing attempts to regulate the use of algorithmic tools.

Let’s step back for a more systematic view of “Automated Decision Systems” or ADS.

These systems:
Process data about people
An embodied AI/robot places it’s hand on a massive pile of data, drawing strength from it
Assist - either in combination with human decision making or autonomously -
An embodied AI/robot embraces a Caucasian man, holding his arms up into a “thumbs up” and a “thumbs down”
in making consequential decisions that impact people’s lives and livelihoods
Additionally, we would want such systems to
Have a specific, stated goal of improving efficiency and promoting - or at least not hindering - equitable access to opportunity.

An embodied AI/robot frantically types on a computer, with its many many arms.

Be publicly disclosed and subject to oversight.

A woman holds up a magnifying glass onto a group of embodied AIs/robots
Is a formula in a spreadsheet an ADS?
Perhaps - depends on what it’s used for!

Is an automated hiring tool an ADS?
Definitely so!
But is a calculator an ADS?
The answer is - no!

From left to right: An embodied AI is wearing a trendy dress made out of a spreadsheet and posing cutely at the reader, with its head slightly cocked to the right. In the middle, an embodied AI/robot is wearing a formal shirt and trousers and is applying facial recognition technology out of its eyes onto the faces of a man and woman. To the right, an embodied AI/robot is dressed in a calculator and is posing defiantly at the reader with its arms crossed in front of it.

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How might we go about regulating ADS?

And should we even attempt to?

While the predominant sentiment in the industry is still that “regulation will stifle innovation”,
Industry alone doesn’t get to decide.

A group of politicians assemble at a summit – a portly man sits to one side, arms crossed in a childish tantrum. The word “industry” is written across his face. Six politicians stand around him, seemingly trying to negotiate. The one in the front has her arms on the table and is glaring straight at the man. The word “government” is written across her face. To her left, a man stand with his hands on the table, but head turned down. “Civil society” is written across his face. Behind them stands a man with his arms crossed in disapproval – the word “academia” is written across his face.

And even in the Silicon Valley, the need for meaningful regulation to ease compliance and limit liability is starting to be more and more broadly recognized.

There is much debate on a specific regulatory framework:
should we use precautionary principles—that can be summarized as “better safe than sorry”?

A young child is standing on her bicycle. She is wearing a helmet, arm guards, knee guards, shin guards and is sitting on a pillow cushioning the seat.

Or, more likely, attempt a more agile risk-based method such as Algorithmic Impact Assessment?

The child is riding her bicycle at top speed – her feet are kicked up and the wind is in her hair. In the next panel, a woman is placing a bandaid atop the knee of the child. Her jeans are torn at the knee, baring a scar beneath, which is being attended to.

All this, and more, is the subject of intense debate.

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As an example, New York City recently made a very public commitment to opening the black box of the government's use of technology.

In May 2018, an Automated Decision Systems Task Force was convened, the first such in the US,
NYC Taskforce Automated Decision Systems
and charged with providing recommendations to New York City's agencies about becoming transparent and accountable in their use of ADS.

Several members of the NYC automated decision systems task force are drawn in the style of superheroes such as the avengers or the justice league.

The Task Force issued its report in November 2019 [4], making a commitment to using ADS where they are beneficial;

[4] New York City Automated Decision Systems Taskforce Report, November 2019
promoting fairness, equity, accountability, and transparency in their use, and reducing potential harm across their lifespan.

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We now need to work together to make these principles more concrete.

How do we make ADS work for all of us?

The first step is to think carefully about our goals.

AI gives us unprecedented opportunities to accelerate science and boost innovation,
to transform how we live and how we govern.

But, when we design AI and put it to use, we should be upfront about the goals we pursue,
who benefits when we reach these goals, and who is harmed.

An embodied AI/robot is standing atop two lions. It's a recreation of the iconic scene from the Lion King – the AI is holding a tiny lion cub in its hands and is raising it up in celebration. The AI has spiked feet, which are piercing into the faces of the lions it perches on, as it lift the baby lion up.

Whether AI works for all of us depends on the choices we make -
Such as deciding how to represent very complex and often unmeasurable concepts.
What are the features we will select to represent a promising job applicant?

Based on what do we decide that a classification rule succeeds or fails?

We see several depictions of an apple in an "Apple museum". To the left is a pixel-art recreation of the apple, with discretized pixels for each tiny portion of the apple. In the middle is a geometric abstract artwork, composed entirely out of circular shapes of different sizes and ratios. To the right is an even more abstract painting of the apple – composed entirely out of squiggly lines of different colors.

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We also must think carefully and critically about whether we trust the data that fuels our AI tools.

Do we trust the data to represent the world such as it is today?

Will it help us move towards a better world, a world that could and should be, or will it simply lock us in a loop where the future repeats the past?

A woman sits at her laptop and we see over her shoulder. From the screen rises out a massive pile of data. An embodied AI/robot is drawing its strength from the data and is growing increasingly large in size. At the very top, the largest AI is holding a globe/ abstract line drawing of the Earth.

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How can we use technology to make society better?

To do so, we must find a pragmatic middle ground between the harmful extremes of
techno-optimism — a belief that technology can single-handedly fix deep-seated societal problems like structural discrimination in hiring, and techno-bashing — a belief that any attempt to operationalize ethics and legal compliance in ADS will amount to ‘fairwashing’ and so should be dismissed outright.

A woman in sunglasses looks straight at the reader. Her eyebrows are slightly furrowed, and her lips form in the beginnings of a smile. In her sunglasses we see the reflection of two distinct scenes. In the left eye we see a boxing match between a blonde woman and an embodied AI/robot. The woman is delivering a massive blow to the AI, and it’s eyes have rolled up to reveal two crosses. In the right eye e see a romantic sunset. In front of it, we see the silhouette of a man and an embodied AI/robot holding hands and staring into each other’s eyes.
To make progress, we all need to step outside our comfort zone.

We need to take it upon ourselves to make the decisions made during the design, use, and oversight of AI - our decisions.
Only if we all step up, will society be able to ground the design of technology in people.
At the end of the day, technology - including AI - is what we make it to be.

WE are AI.

We see a group of humans, reminiscent of the evolution of man. From left to right we see a small child holding a stuffed toy in the shape of a robot, then a woman

in a wheelchair, then a man, next a woman waving at the reader, and finally, another woman stepping into a large screen/electronic tablet. On the other side of the device, and at the end of the lineup is an embodied AI/robot waving the “peace” sign/ victory sign at the reader.