LAYSHI CURBELO

AI, UX, and A11Y:
Is the Future Ready For All Of Us?

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User Experience Designer and CEO of Command Z, a traveling podcast focused on design, technology and communication.

130+ Episodes

10+ Recorded Countries

10k+ Impacted Designers

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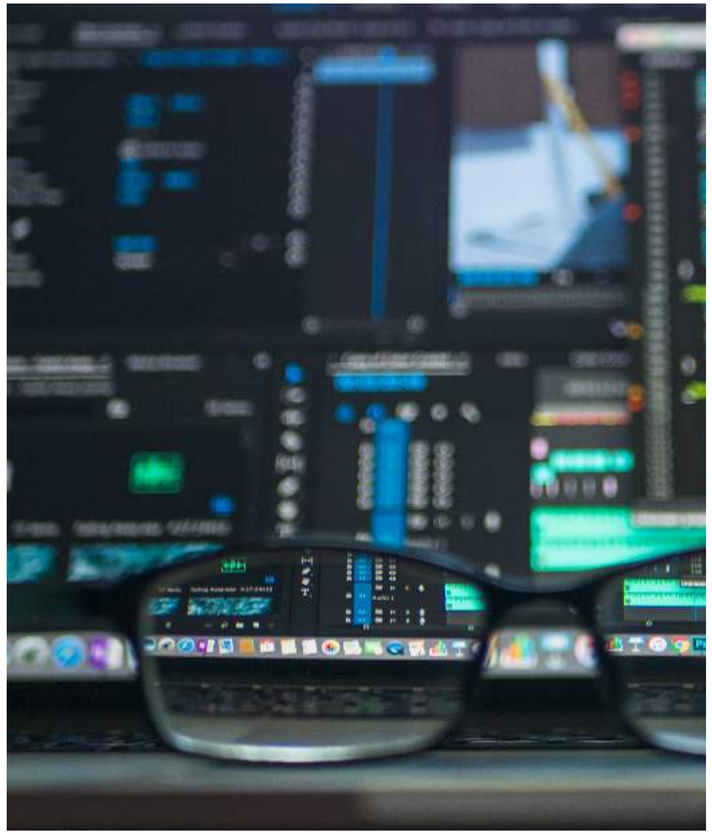
Agenda

- What is...A11Y, AI, and UX.
- Why a11y is important?
- How does a11y affect ux?
- UX is replacing by AI?
- Ai Ethics
- Data Sets
- How to avoid Bias



What is?

A11Y, AI, and UX.

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Why a11y is important?

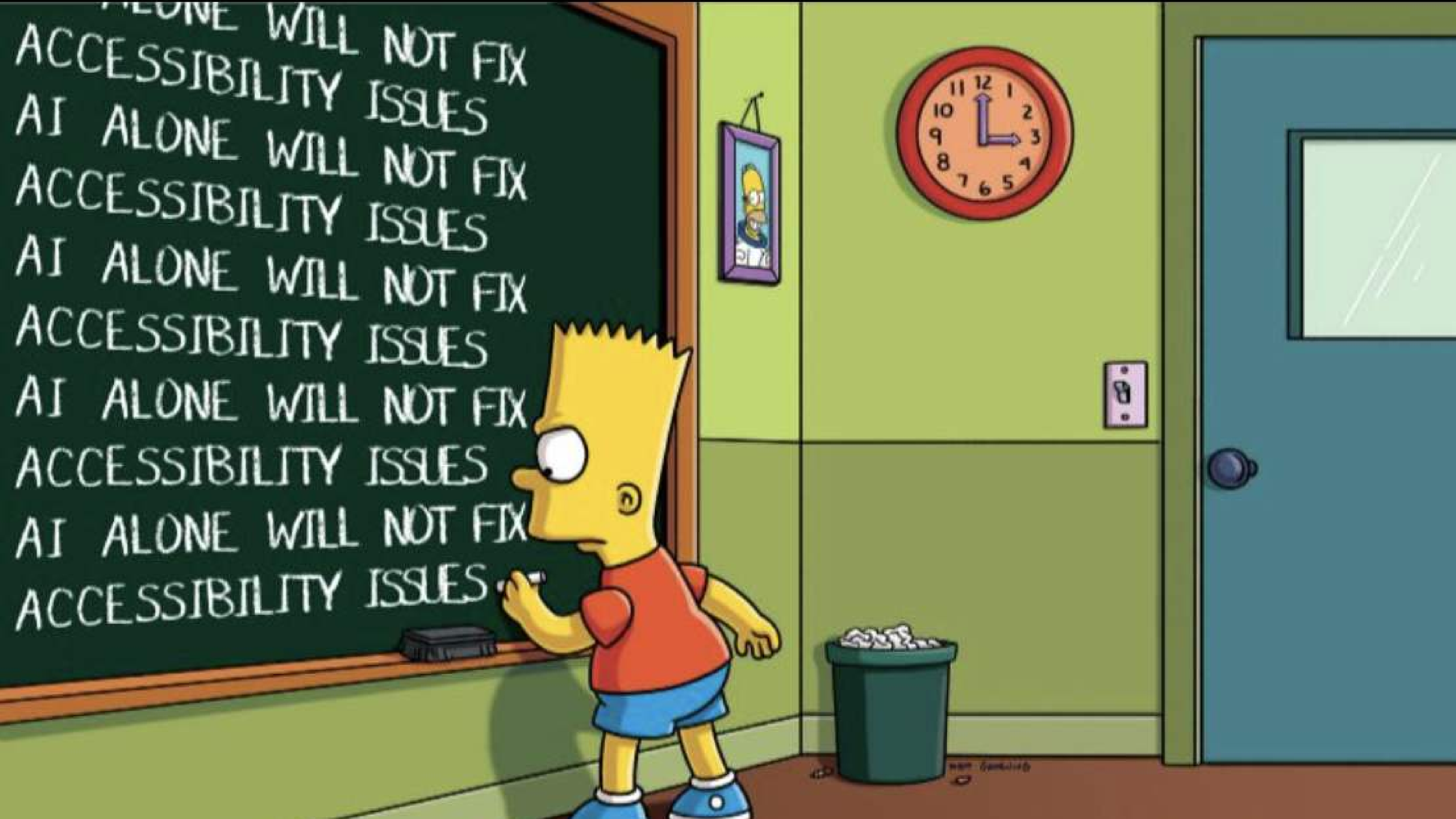
A11Y Affect UX?

- ✍🏻 Improved Usability
- ⌨️ Reduced Friction
- 🧠 Enhanced Engagement
- 📣 User Empowerment
- 💬 Innovation

Is AI replacing UX?

Is AI replacing UX?

- AI has the potential to shake up the UX design world by providing insights, automating tasks, and making user experiences better.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Is AI replacing UX?

- 🗣️ Speech Recognition and Voice Interfaces
- 🔵 Machine Learning for Personalization
- 💬 Image Recognition and Description
- 💻 Content Summarization
- ⌨️ Predictive Text and Autocomplete
- 🔤 Gesture Recognition

AI alone will not fix A11Y issues

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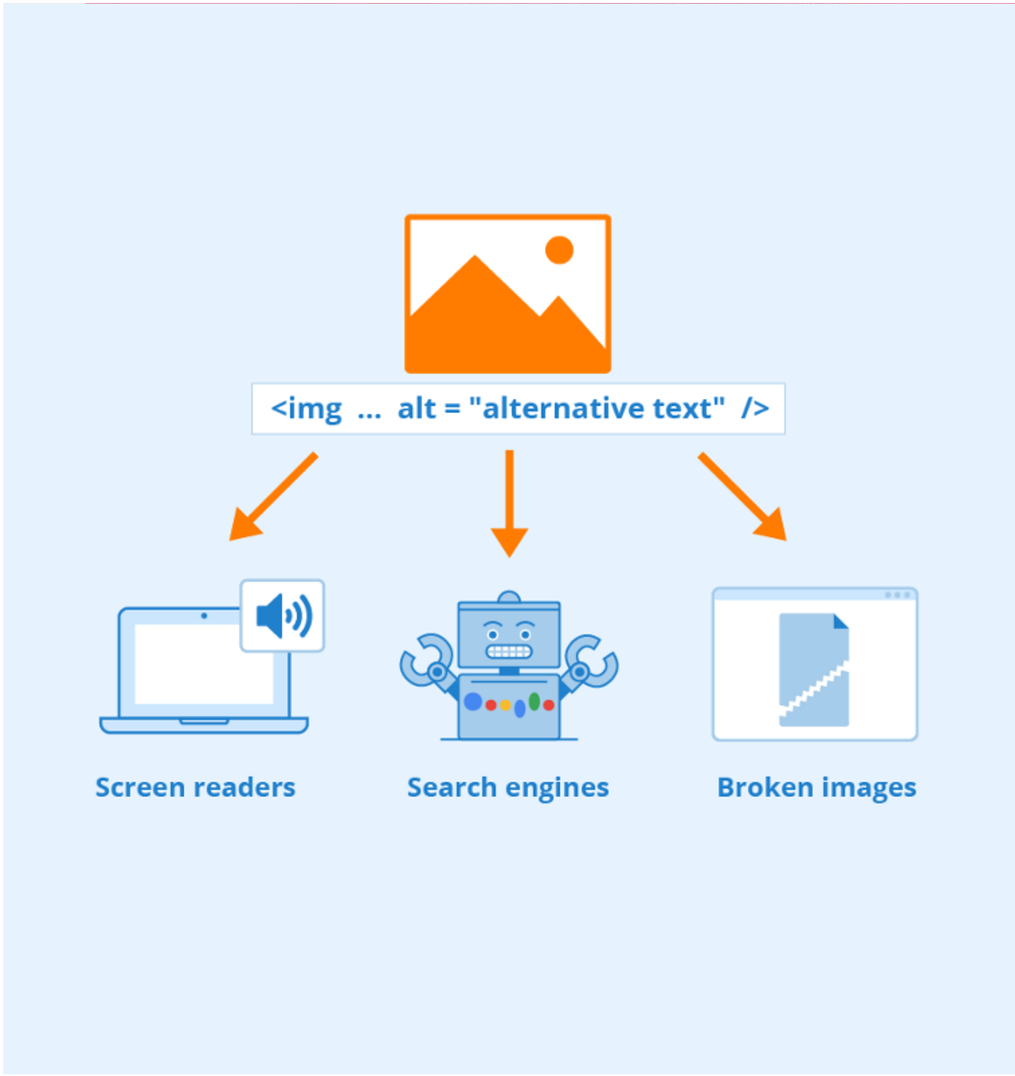

AI alone will not fix A11Y issues

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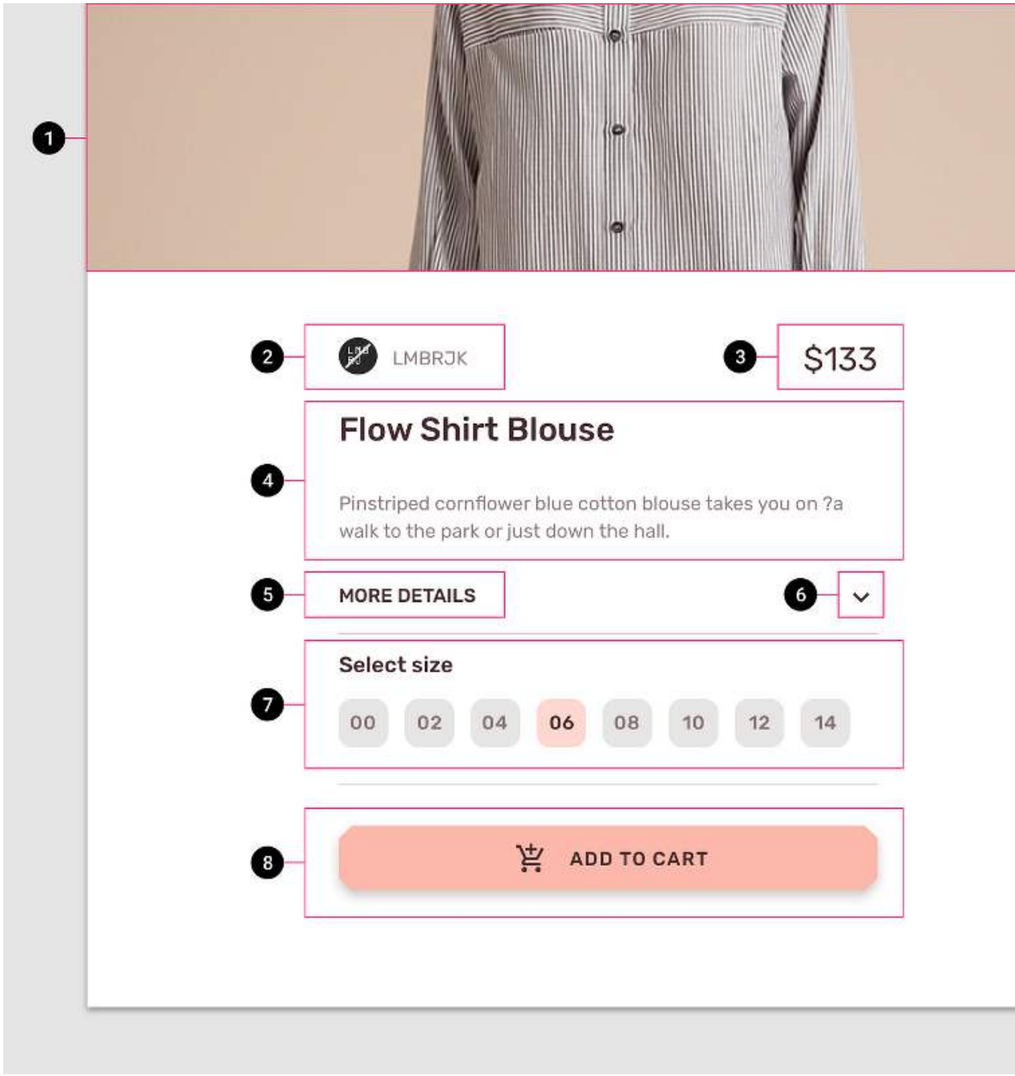
Operable



AI alone will not fix A11Y issues

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Understandable

AI alone will not fix A11Y issues

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Robust

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Nevertheless, there's a risk of AI making unwarranted assumptions and decisions that may not align with ***users' best interests***.

Designers must carefully contemplate the ***ethical implications*** of integrating AI into their design processes.

AI Ethics

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Responsible AI

Responsible AI refers to the ethical and conscientious development, deployment, and use of artificial intelligence (AI) technologies prioritizing **Security**, **Privacy**, **fairness**, **transparency**, and **discrimination** in technology.

The goal ultimately fostering trust and confidence in AI technologies.

Data Sets & Representation

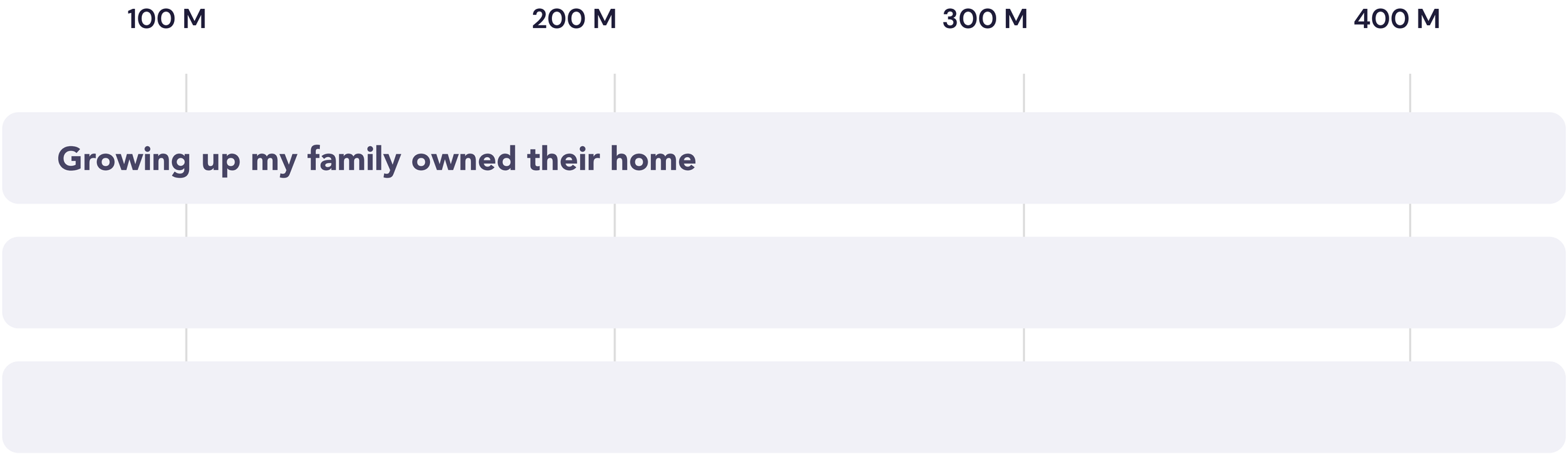
"bias-in, bias-out"

What are data sets?
Is a structured collection of data. It is a fundamental component of data analysis, machine learning, and statistical research.

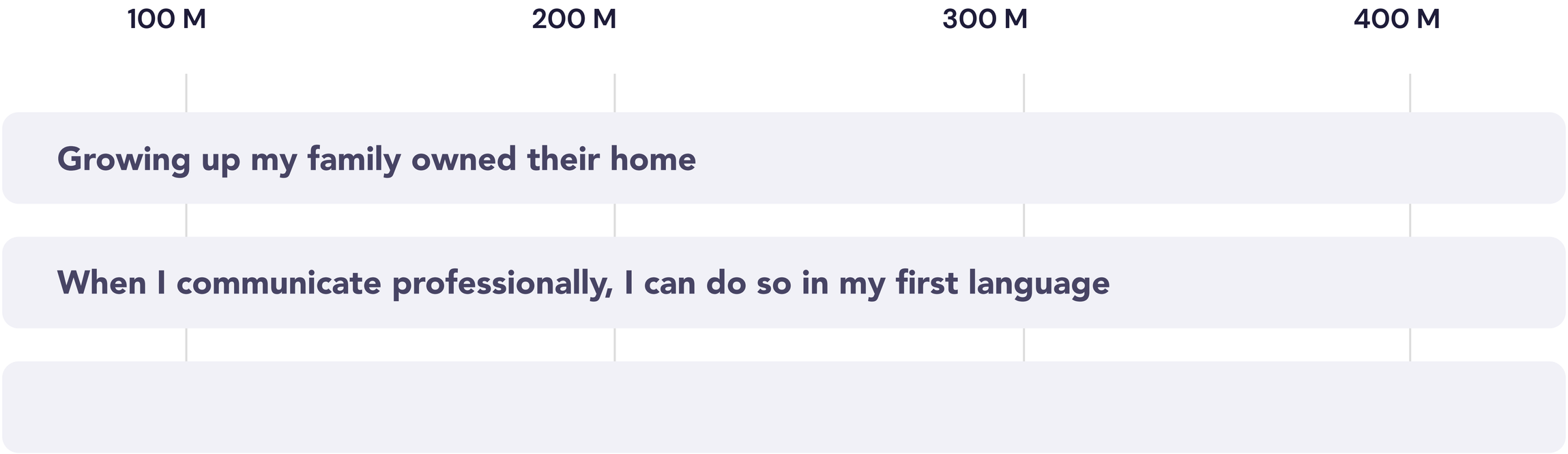
Data Sets & Representation

Intersectionality

These combine to create intersecting forms of privilege and oppression depending on a person's context and existing power structures.



Source: Canadian Research Institute for the Advancement of Women



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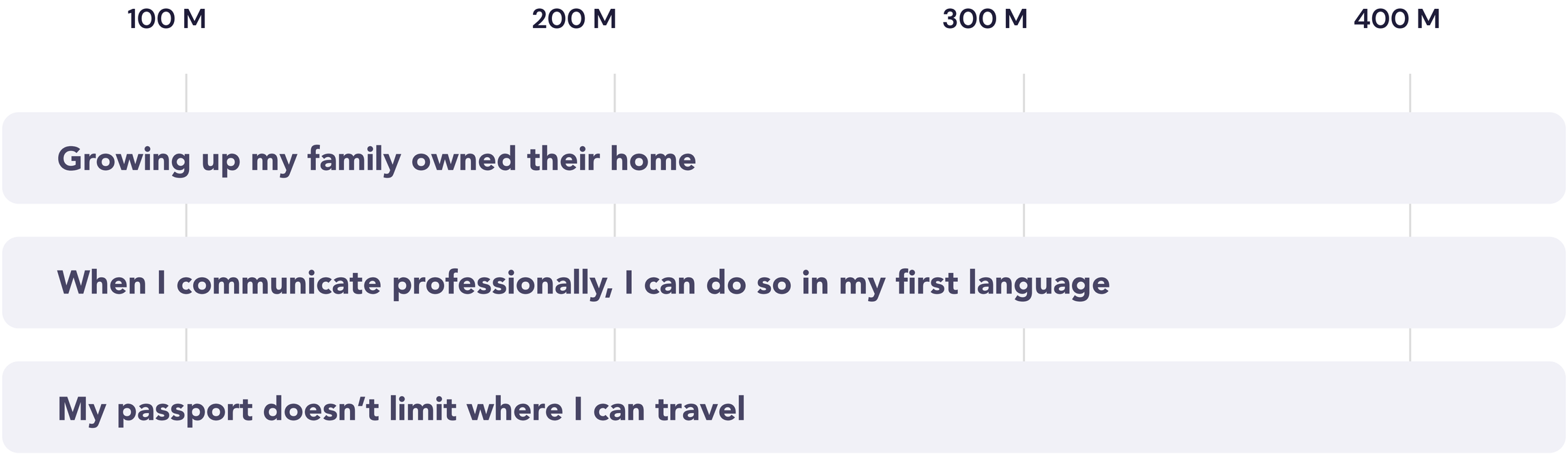


Source: Canadian Research Institute for the Advancement of Women

Data Sets & Representation

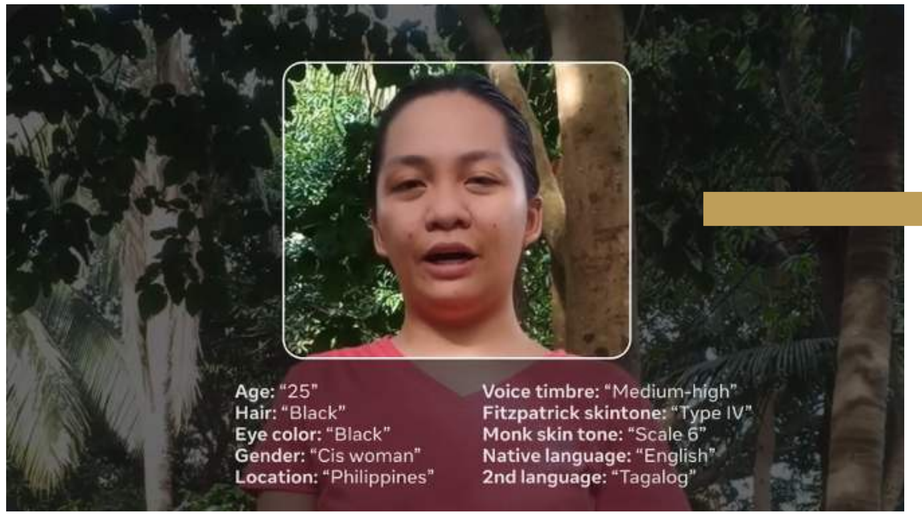
Data scientists who develop AI systems may inadvertently use incomplete or biased data, leading to inaccurate decision-making.

Intersectionality

Data Sets & Representation

Intersectionality 👋🏻🤚🏽🖐🏿

It offers 11 self-provided and annotated demographic categories to measure algorithmic fairness and robustness.



Intersectionality Approach to data

Intersectional approaches build on the human rights-based data principles of participation, data disaggregation, self-identification, transparency, privacy, and accountability.

Intersectionality Approach to data

Establish a commitment to centering the voices of individuals at greatest risk

Intersectionality Approach to data

Promote equity across the entire data value chain.
Who is doing the analysis and what do they know about intersecting inequalities?

Intersectionality Approach to data

Ensure that institutional data systems are inclusive and safe.

Intersectionality Approach to data

Engage data to increase awareness and reduce inequality.

Intersectionality Approach to data

Build Inclusive Institutions.

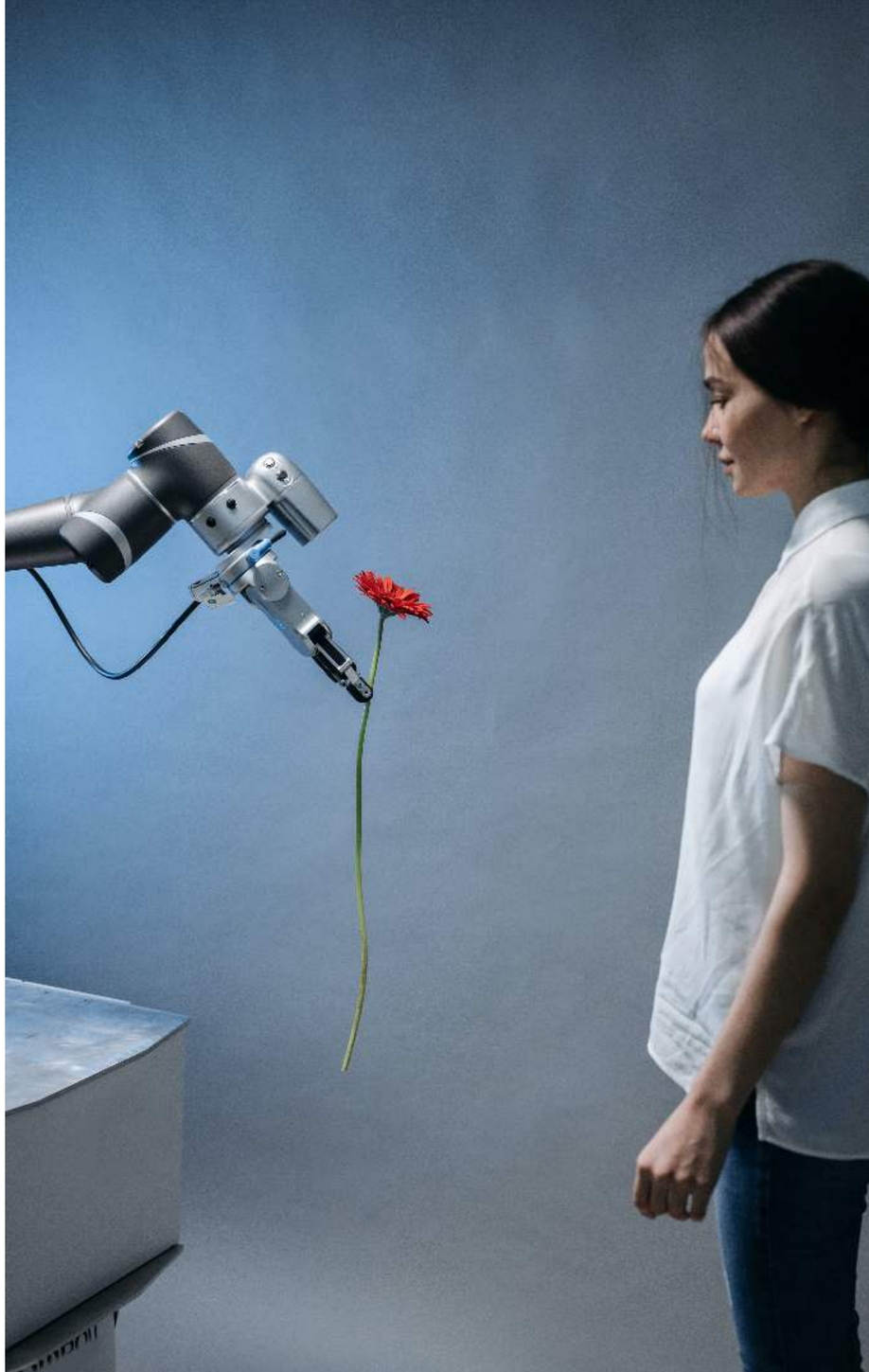
AI itself can't be responsible for a given outcome, because ultimately the technology is still human-led.

To mitigate bias and promote diversity, it's essential to ensure the ***training dataset*** includes ***underrepresented groups*** and is more diverse overall.

This inclusivity enhances the AI algorithm's ability to avoid bias.

Explainable AI

Explainable artificial intelligence (XAI) is a set of processes and methods that allows human users to comprehend and trust the results and output created by machine learning algorithms.

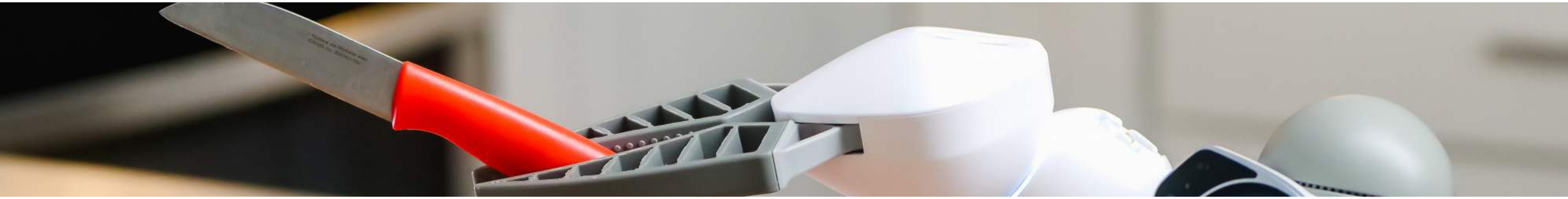


Explainable AI

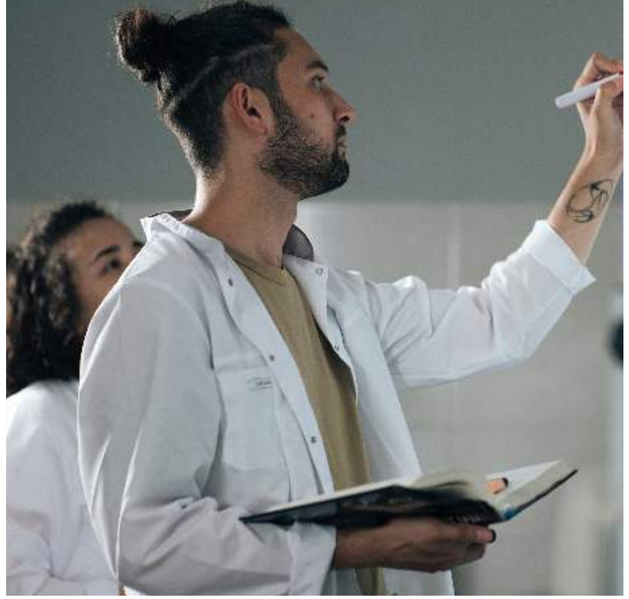
- *AI explainability also helps an organization adopt a responsible approach to AI development.*
- *Explainable AI also helps promote end-user trust, model auditability and productive use of AI.*
- *It also mitigates compliance, legal, security, and reputational risks of production AI.*

Explainable AI can improve the ***user experience*** of a product or service by helping the ***end user trust that the AI*** is making good decisions.

Explainable AI Techniques



- ***Prediction Accuracy:*** *XAI assesses prediction accuracy by running simulations and comparing AI outputs to training data.*
- ***Traceability:*** *Involves limiting decision-making methods and narrowing the scope of machine learning rules and features.*
- ***Decision Understanding:*** *This aspect addresses the human factor. To foster trust in AI, individuals need to understand how and why AI makes decisions.*



Responsible AI

Responsible AI looks at AI during the planning stages to make the AI algorithm responsible before the results are computed.

Explainable AI

Explainable AI looks at AI results after the results are computed.

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Responsible AI

A large US corporation has teamed up with IBM to automate its hiring processes while keeping its AI unbiased. In terms of attracting and recruiting new candidates, **it was crucial for the employer to drive diversity** and inclusion while ensuring fair and trustworthy decisions of its ML models.

Explainable AI

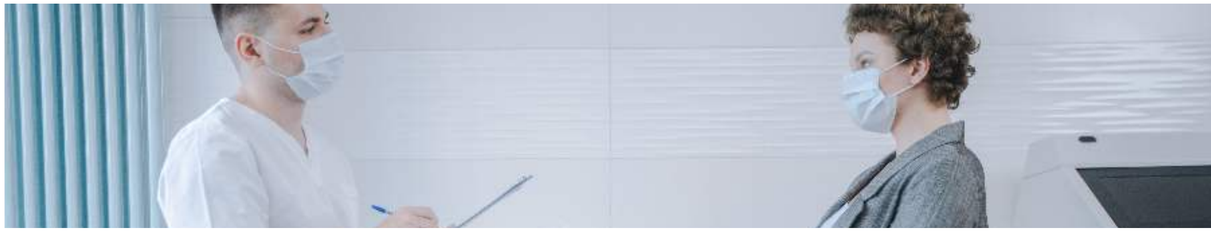
Hospitals can use explainable AI for cancer detection and treatment, **where algorithms show the reasoning behind a given model's decision-making.** This makes it easier not only for doctors to make treatment decisions, but also provide data-backed explanations to their patients.

Responsible AI

An example from 2015 involves Amazon attempting to create an algorithm to evaluate job candidates based on past selections. The algorithm favored men due to biased training data, disadvantaging unconventional profiles like women.

Explainable AI

Winterlight Labs, a Canadian company, developed Alzheimer's detection tests using speech analysis, but the algorithm, trained only on native English speakers, could misinterpret non-natives' speech variations as signs of the disease.



How we can avoid AI Bias?

How to avoid AI Bias

- 🧅 Use good data
- 💻 Property train the AI
- 🧍🏽 Human interaction

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Algorithms do not create biases themselves but may perpetuate societal inequities and cultural prejudices.

Thank you!

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