

Who Am I Building This for?
How Will They Use It?



Responsible AI: Human-Centered Design



Course 1

Fundamentals of TinyML

- What am I building?
- **Who am I building this for?**
- What are the consequences for the user if it fails?

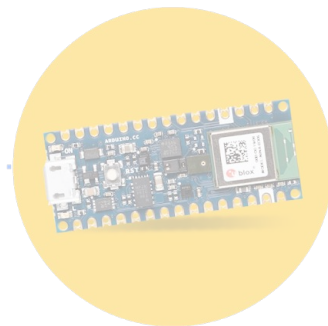
Course 2

Applications of TinyML



Course 3

Deploying TinyML



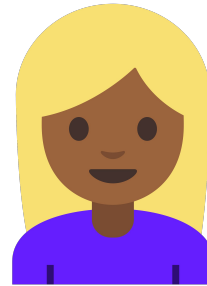
Who am I building this for?

Who are the **stakeholders** impacted by the proposed technology?

Be specific!

- Age
- Gender
- Physical abilities
- Location

Direct

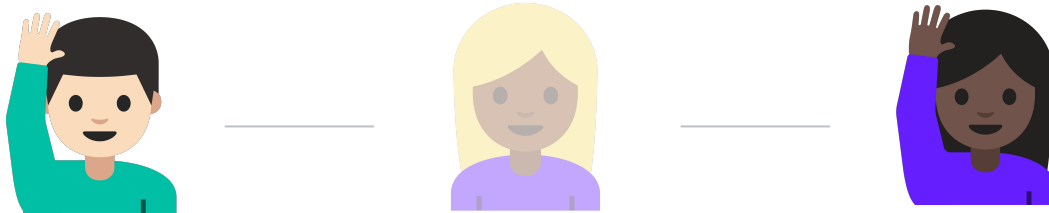


aka the “User(s)”

Who am I building this for?

Who are the **stakeholders** impacted by the proposed technology?

Indirect

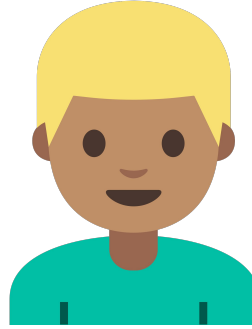


What do the stakeholders **value**?



Direct (Doctor)

- **Accuracy**
- Training/skill set
- Ease of use
- Research advances



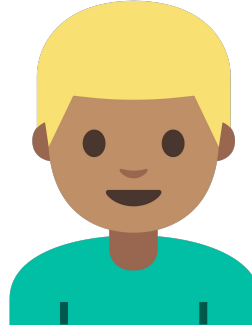
Indirect (Patient)

- Personal care
- **Being informed / autonomy**
- **Trust**
- Privacy

Do value tensions arise?



Direct (Doctor)



Indirect (Patient)

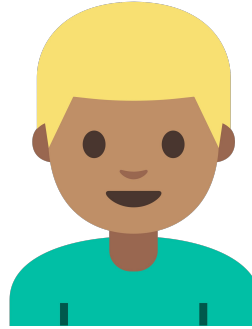
- **Accuracy**
 - Training/skill set
 - Ease of use
 - Research advances
- Personal care
 - **Being informed / autonomy**
 - **Trust**
 - Privacy
- Two red lines originate from the 'Accuracy' item in the 'Direct' column and point to the 'Being informed / autonomy' and 'Trust' items in the 'Indirect' column, illustrating a value tension.

Do value tensions arise?



Direct (Doctor)

- Accuracy
- Training/skill set
- Ease of use



Indirect (Patient)

- Personal care
 - Being informed / autonomy
 - Trust
- **Research advances** ——— • **Privacy**

How can we **resolve** value tensions?



1

Is one of the
conflicting values
considered a **right**?



2

Do the stakeholders
prioritize certain
values?

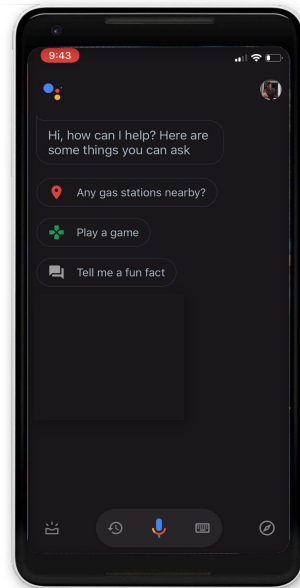


3

Does the value have
a **threshold** for
sufficiency?

Consider diverse perspectives

How does this technology look when analyzed from **diverse perspectives**, particularly those that are historically marginalized or under-represented?



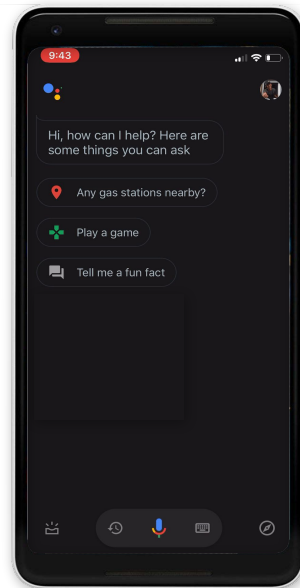
Consider diverse perspectives

How does this technology look when analyzed from **diverse perspectives**, particularly those that are historically marginalized or under-represented?

Example:

How would the choice of command phrases look to...

- People who are **non-native English speakers**?
- People who speak **African American Vernacular English**?
- People with **speech impairments**?



Consider social context

What is the **social context** in which the technology will be used?

What features of this context are likely to impact **access, adoption and use**?



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Example:

If our intended users span different countries...

- Will there be a **digital divide**?
- Do the countries have different **rules** and **regulations** for **data protection**?
- Do **customs** impact how users **prioritize values**?



We identified **who** we are
building for...

But ***how*** are they going to use it?

How are they going to use it?

Multistability

Even if we design technology for a specific purpose, it may be compatible with immoral, malicious or simply unintended purposes

Google pledges to hold off on selling facial recognition technology

The company says important policy questions need to be answered first.

New AI fake text generator may be too dangerous to release, say creators

Google pledges to hold off on selling facial recognition technology

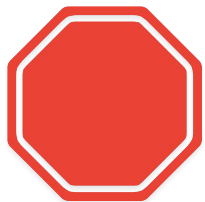
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New AI fake text could be too dangerous to release

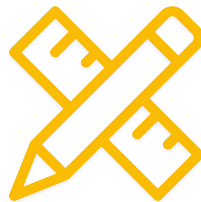
AI-generated text could be too dangerous to release, say some experts

Non-Intended Use—What should we do?



STOP

Stop developing the
technology altogether



CHANGE

Implement design choices
to prevent or mitigate
non-intended use



REPURPOSE

Embrace non-intended
use and redesign for
new purpose