NAME: Data Glove ABI / ASL Prediction
DATE: September 5, 2024 5:58 PM
DESCRIPTION OF TECHNOLOGY

HUMAN VALUES

The technology might help people be more self-sustaining, by allowing them to use an alternative method for fine motor control that they have lost after their ABI. The project might fill the role of a person if someone else was previously doing these actions for them, however it will never completely remove that person as there would still be actions that the technology cannot do. It might improve the dignity of the users as they feel less dependent on others.

TRANSPARENCY

It is not currently, however the final product should contain this or at least link to somewhere external where it is described.

IMPACT ON SOCIETY

ABI survivors lose quite a lot of movement in their upper extremities, and most of them never fully recover. Fine motor skills impact our lives quite a lot, and if you cannot play a game anymore because you cannot move the controller or cannot type anymore because moving your fingers so minimally is too difficult, can distance you from your environment, you become dependent on them or lose access to them.

STAKEHOLDERS

- The main users are those with ABI who can still move their fingers but cannot easily do fine motor skill such as typing or moving a videogame controller. It can also be used by other people who want to use alternative control methods for whatever reason, maybe because they have carpal tunnel and can't do some movements anymore or people who want to practice their ASL fingerspelling for some quick communication. But the main target group is ABI survivors.

SUSTAINABILITY

Currently, energy use is not taken into consideration. Once it becomes more clear exactly which resources are needed, it can be considered in the decision-making.

HATEFUL AND CRIMINAL ACTORS

It can't. It predicts using a dataglove what sign you are making with your hand. It will be used as an alternative control metric. It doesn't give you access to anything it shouldn't or anything like that. It is about the same as switching a mouse for a joystick.

DATA

This technology does have the shortcoming that the data input is subjective, the position of your hand can be slightly tilted. but it should still recognize it as the sign. ABI survivors also might have a tremor which would distort the data, especially in the case of dynamic signs.

FUTURE

The technology could be expanded with more movements, because more people means more access to data, and more room for training. It could also mean getting the resources to develop a cheaper, more accessible glove so even more people have access to the technology who need it. The technology could also be used for physical therapy exercises, having people train certain hand positions or movements.

PRIVACY

Right now the technology doesn't register personal data. If from research it turns out that users need an individual calibration the only thing needed is a userID to connect the user to the calibration.

INCLUSIVITY

This technology has no obvious bias, except for the fact that it currently requires 5 fingers, as the thing we are predicting, ASL finger spelling, requires 5 fingers.

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HUMAN VALUES

How is the identity of the (intended) users affected by the technology?

To help you answer this question think about sub questions like:

- If two friends use your product, how could it enhance or detract from their relationship?
- Does your product create new ways for people to interact?…

TRANSPARENCY

Is it explained to the users/stakeholders how the technology works and how the business model works?

- Is it easy for users to find out how the technology works?
- Can a user understand or find out why your technology behaves in a certain way?
- Are the goals explained?
- Is the idea of the technology explained?
- Is the technology company transparent about the way their…

IMPACT ON SOCIETY

What is exactly the problem? Is it really a problem? Are you sure?

Can you exactly define what the challenge is? What problem (what 'pain') does this technology want to solve? Can you make a clear definition of the problem? What 'pain' does this technology want to ease? Whose pain? Is it really a problem? For who? Will solving the problem make the world better? Are you sure? The problem definition will help you to determine…

STAKEHOLDERS

Who are the main users/targetgroups/stakeholders for this technology? Think about the intended context by…

When thinking about the stakeholders, the most obvious one are of course the intended users, so start there. Next, list the stakeholders that are directly affected. Listing the users and directly affected stakeholders also gives an impression of the intended context of the technology.
…

SUSTAINABILITY

In what way is the direct and indirect energy use of this technology taken into account?

One of the most prominent impacts on sustainability is energy efficiency. Consider what service you want this technology to provide and how this could be achieved with a minimal use of energy. Are improvements possible?

HATEFUL AND CRIMINAL ACTORS

In which way can the technology be used to break the law or avoid the consequences of breaking the law?

Can you imagine ways that the technology can or will be used to break the law? Think about invading someone's privacy. Spying. Hurting people. Harassment. Steal things. Fraud/ identity theft and so on. Or will people use the technology to avoid facing the consequences of breaking the law (using trackers to evade speed radars or using bitcoins to launder…

DATA

Are you familiar with the fundamental shortcomings and pitfalls of data and do you take this sufficiently into…

There are fundamental issues with data. For example:

- Data is always subjective;
- Data collections are never complete;
- Correlation and causation are tricky concepts;
- Data collections are often biased;…

FUTURE

What could possibly happen with this technology in the future?

Discuss this quickly and note your first thoughts here. Think about what happens when 100 million people use your product. How could communities, habits and norms change?

PRIVACY

Does the technology register personal data? If yes, what personal data?

If this technology registers personal data you have to be aware of privacy legislation and the concept of privacy. Think hard about this question. Remember: personal data can be interpreted in a broad way. Maybe this technology does not collect personal data, but can be used to assemble personal data. If the technology collects special personal data (like…

INCLUSIVITY

Does this technology have a built-in bias?

Do a brainstorm. Can you find a built-in bias in this technology? Maybe because of the way the data was collected, either by personal bias, historical bias, political bias or a lack of diversity in the people responsible for the design of the technology? How do you know this is not the case? Be critical. Be aware of your own biases.…

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