QUICKSCAN - CANVAS

Driver Drowsiness Detection

NAME: Driver Drowsiness Detection
DATE: September 4, 2024 5:12 PM

DESCRIPTION OF TECHNOLOGY
We are going to use a camera to detect the eyes of the driver. If the eyes are closed for more than 10 seconds, we would alert the driver, because he is falling asleep.

HUMAN VALUES

The identity of the intended users is typically not directly affected by driver drowsiness detection technology. The technology is primarily designed to monitor and assess the level of drowsiness or fatigue of drivers, without specifically identifying individual users.

TRANSPARENCY

We are going to provide comprehensive training programs for drivers and relevant stakeholders to ensure they understand how the system operates, its limitations, and the appropriate response to alerts

IMPACT ON SOCIETY

The problem is the risk of accidents caused by fatigued or drowsy drivers. In addition, they pose a significant risk to road safety. Furthermore, the severity of this problem has been backed by extensive research and real-world data.

STAKEHOLDERS

- Drivers
- Transport companies
- Technology Developers
- Insurance Companies
- Regulatory Authorities
- General Public

SUSTAINABILITY

We are taking energy consumption into accout. We are optimizing our alogorithms and software to minimize computational demands.

HATEFUL AND CRIMINAL ACTORS

In some instances, individuals could attempt to deceive or manipulate the system to avoid detection or bypass safety measures. For example, someone might try to artificially simulate alertness to evade alerts or engage in dangerous behavior while relying on the system's false sense of security.

DATA

Bias in data; Data accuracy and reliability; Privacy and data protection

FUTURE

In the future, we could enhance accuracy, include personalization and adaptation, we could integrate it into autonomous vehicles.

PRIVACY

The technology analyzes facial expressions, eye movement, or changes in facial patterns to detect signs of drowsiness.

INCLUSIVITY

The software is biased at better classifying at certain angles.

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QUICKSCAN - CANVAS - HELPSIDE

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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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