NAME: EV-Consumption Prediction
DATE: July 2, 2025 3:09 AM

TICT

DESCRIPTION OF TECHNOLOGY
This is an analysis of the EV-consumption prediction project. The project is about a machine-learning model that can predict the amount of charge needed in an EV to travel a certain distance. The model analyzes the past data to be able to create a prediction for the amount of charge needed. The data retrieved from the vehicles is used locally to avoid any chance of online leaks.

HUMAN VALUES

The identity of the intended users, primarily drivers of electric vehicles, is affected by the technology in several ways:

Enhanced Responsibility: Users may become more aware and responsible for energy consumption, as the technology encourages planning and efficient use of resources.

Tech-Savvy Image: Users might be perceived as more tech-savvy and environmentally conscious, aligning with innovati…

TRANSPARENCY

The complete documentation regarding the process and reasoning behind the choices made were explained along with the future recommendations on how the model could be improved. Yes, i believe that the users/stakeholders will be aware of how the technology works and the reasoning behind it, also the document structure is created in a way that it will be easy for the user to locate documents regarding any queries they may have of the technology.

IMPACT ON SOCIETY

There is a huge rise in Electric vehicles in the Netherlands, the Dutch government also wants to completely ban the intake of petrol and Diesel cars by 2030 as well as, and they want to make passenger vehicles by 2030 emission-free.

Since EV usage in the country will rise, it will also need more charging infrastructure to charge the vehicles, it will also need more energy (in terms of electricity), plus it will also introduce many new EV drivers.…

STAKEHOLDERS

- Private EV owners
- Fleet owners

SUSTAINABILITY

This project aims at reducing the load on power usage, so in a way, the project aims at reducing energy consumption. However, it must be noted that while making the project, energy usage was not taken into consideration, it is also worth noting that the queries and code were highly optimised so as to do the least possible computations in order to be faster and energy efficient.

HATEFUL AND CRIMINAL ACTORS

Individuals might use the technology to plan routes that involve illegal activities, such as avoiding law enforcement checkpoints or facilitating the transportation of contraband. Additionally, the misuse of personal data collected by the technology could lead to identity theft or privacy breaches, potentially resulting in illegal activities like fraud or harassment.

DATA

Yes, I am aware of the pitfalls and understand that the data is never concrete and is always biased.
I took that into account by considering carefully only the parameters which I needed and the ones that directly affect the charge in an EV. However, I still need to keep an eye on the model and it's performance during the production to catch any missing pitfalls.

FUTURE

This technology if used by millions of people could be beneficial for the environment as well as it will be beneficial by saving time as a resource. Since this application aims at reducing range anxiety, it aims to equip the user with the knowledge regarding how much charge they need in their vehicle for a certain trip. having this information will help million of user to be less stress stay informed take informed decisions and charge their vehicle as much as necessary, leading to the sharing of resources and saving time, in…

PRIVACY

Yes, it does use personal data :

Vehicle Information: Details about the electric vehicle, such as model, battery capacity, and energy efficiency.

User Preferences: Information on driving habits.

Usage Patterns: Data on how frequently and for what distances the vehicle is used.…

INCLUSIVITY

As far as I know, I took measures to ensure that there is no bias in the model however, I will have to keep an eye on this while the model si in prediction to ensure that no bias seeps in the model with time.

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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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