NAME: Ordina train delay prediction

TICT

DATE: June 30, 2025 10:28 PM

DESCRIPTION OF TECHNOLOGY

This project aims to make a model that predicts if there is a delay or not and how long the delay is going to be. The problem it is trying to solve is that sometimes people get stuck on the train because of the delays and with our idea people would be able to make a choice to take the car by looking at the predictions before going on the train. How realistic this idea is, is something that we will find out along…

HUMAN VALUES

TRANSPARENCY

The technology we will deliver to the stakeholders is well explained and it gives a clear idea of what the project is about. We wrote a project proposal, including all important headers, which makes the understanding of it very easy for anyone. In addition, we put descriptions, conclusions and comments on every code we put in the notebooks so that everyone who reads it will understand what the code/graph is about. We are preparing a short presentation before each meeting with the stakeholders, where we put the most…

IMPACT ON SOCIETY

Ordina has employees that need to travel all over the Benelux, these employees are likely to be reliant on public transport. Ordina tasked us with finding a way to improve the efficiency of their employees' travel, using machine learning. Ordina linked us to a public archive of train data for a head start.

We decided to use this train data to try to predict train departure delays in the Netherlands, Ordina will receive a trained model but no implementation thereof.

STAKEHOLDERS

- Ordina employees
- NS

SUSTAINABILITY

HATEFUL AND CRIMINAL ACTORS

DATA

We faced a few issues when we were working with the data. The biggest one was that the data was not balanced. There were much more train departures without delays than with delays. Also, the data was from 2016, taking into account the events that happened only in the last 2 years, we faced a pandemic, war and similar events that may disturb the train data with missing values or unpredictable behaviours. Because of that, it is difficult to predict delays accurately in real life, especially with old data. We also think that the data…

FUTURE

People could become over-reliant on our model and trust advice based on it so much that they don't even think of alternatives.

The model cannot predict any kind of accident or sudden fault that results in huge delays. Where any kind of accident happens at some point users might hold us or the implementers of our model responsible for not being able to predict it.

PRIVACY

INCLUSIVITY

Our model or does not have a bias in the sense of being racist or anything but the data is unbalanced in the sense that there are overall more no delays than delays, there are more ns trains in there etc. but those biases are there in real life. the fact is that there are more no delays than delays (luckily otherwise it would kind of mean our train system isn't doing a good job). it is nothing that the people who collect changed.

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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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