QUICKSCAN - CANVAS

Machine learning

NAME: Machine learning
DATE: April 25, 2024 8:18 PM

DESCRIPTION OF TECHNOLOGY
Prediction of wine quality using various machine learning algorithms. The models will train on physio-chemical data derived from samples of wines to determine their quality level.

HUMAN VALUES

The technology could make it so that vinologists and sommeliers are regarded as less important; that is if the model turns out to be very accurate. However, as wine quality is very much decided by personal taste, this would be very unlikely.

TRANSPARENCY

The data collected can be explained in a white paper, but the exact workings of the model cannot be explained. The technology being machine learning means that it will find links and draw conclusions on its own, without human intervention or a way to explain what exactly those decisions are based on.

IMPACT ON SOCIETY

The goal of the machine learning model is to predict the quality of a wine (scored 1-10 or good/bad) based on physio-chemical analysis. It can help customers, wholesalers, and wine shops help choose wines to buy, and could help winemakers craft better wines.

STAKEHOLDERS

- Wine shops/wholesalers
- Wine customers
- Winemakers
- Vineyard owners

SUSTAINABILITY

Direct energy is used for training the model(s) and powering the devices that use said models to make predictions. Indirectly, energy is used to gather the information necessary to train the models and do the analysis.

HATEFUL AND CRIMINAL ACTORS

As all data will be anonymous, identity theft is not an issue. However, it could be possible to skew the data by mislabelling the subjective part of the data en masse.

DATA

Wine quality is very much a subjective thing. Objective measurements could be used to get a rough idea of the quality, but ultimately the experience of tasting it will determine whether or not a wine is of good quality.

FUTURE

People could get dependent on the judgement given by the machine learning model and refuse to try something that has not been recommended. As such it would be very hard to get recommended if you are a beginning winemaker or a winemaker who has had struggles with quality in the past.

PRIVACY

The technology does not register personal data.

INCLUSIVITY

Assuming all data is purely physio-chemical and objective, no. But when subjective data is added, it could be skewed, since people from region A might not like wines from region B as much. Region B would be rated lower in that case, causing a bias.

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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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