QUICKSCAN - CANVAS

Bike Sharing Demand Prediction

NAME: Bike Sharing Demand Prediction
DATE: September 3, 2024 9:13 PM

DESCRIPTION OF TECHNOLOGY
Using machine learning to get an accurate prediction of when how many bikes are needed.

HUMAN VALUES

The technology of bike sharing affects users by providing a convenient and eco-friendly transportation option, promoting healthier lifestyles and reducing environmental impact. It facilitates accessibility and can contribute to a sense of community by encouraging shared mobility.

TRANSPARENCY

Yes, comprehensive explanations about how the technology functions are provided to users and stakeholders. Transparency is a key principle in ensuring understanding and trust in the technology's operations and impact.

IMPACT ON SOCIETY

The problem is predicting bike-sharing demand accurately on an hourly basis using machine learning. It is a significant challenge, as various factors like weather, time, and user types influence demand. This is a genuine problem, especially for bike-sharing services aiming to optimize resources and provide efficient services based on user needs and environmental conditions.

STAKEHOLDERS

- Bike-sharing service providers
- City planners
- Users looking to rent a bike

SUSTAINABILITY

The technology considers the direct and indirect energy use by optimizing bike sharing demand, specifically focusing on reducing and optimizing the energy consumption of electric bikes within the rental fleets.

HATEFUL AND CRIMINAL ACTORS

The technology could potentially be misused to analyze patterns in bike-sharing data for unlawful activities, such as tracking individuals' movements or planning illicit activities. Strict data privacy measures should be in place to prevent misuse.

DATA

Yes, I am aware of the fundamental shortcomings of data, including subjectivity, incompleteness, correlation-causation challenges, biases, and the complexity of reality. The technology acknowledges these issues by implementing robust data validation, addressing biases, and applying statistical methods to interpret data with caution.

FUTURE

The technology could evolve to enhance predictive capabilities, improve user experience, and further optimize bike sharing systems. Additionally, advancements may include incorporating more sustainable practices and location specific forecasting

PRIVACY

No, the technology does not contain any personal data. It contains global public data. However, the main data provider does track departure and arrival locations.

INCLUSIVITY

The technology aims to minimize bias, but inherent biases may exist due to historical data patterns or algorithmic limitations. Regular assessments and adjustments are conducted to identify and address biases, promoting fairness and equitable outcomes.

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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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