NAME: EV Charging Rate Optimization App

DATE: July 4, 2025 12:29 PM

DESCRIPTION OF TECHNOLOGY

The EV Charging Rate Optimization App is a smart technology that helps EV users manage their vehicle charging schedules to take advantage of lower electricity rates and sustainable energy sources. The app monitors electricity rates in real-time and enables charging when prices are at their lowest, helping users to save on energy costs. Additionally, the app includes an option to charge only when renewable…

HUMAN VALUES

The technology empowers users by enabling them to make more informed and environmentally conscious charging decisions. For users who prioritize cost efficiency and sustainable energy, the app reinforces their identity as eco-conscious consumers. However, there is minimal risk of this technology detracting from user relationships or dignity, as its primary function is to streamline charging decisions. Instead, it supports users personal values around sustainability, potentially enhancing their identity as responsible,…

TRANSPARENCY

Yes, it is essential that users understand how the app operates and how it affects their charging decisions. There will be clear explanations about how the app selects optimal charging times based on cost and energy availability, as well as information on the eco-benefits. Any costs associated with premium features or subscriptions will be transparently disclosed, with a straightforward breakdown of the apps capabilities.

IMPACT ON SOCIETY

The core problem the EV Charging Rate Optimization App aims to address is the challenge EV users face in managing charging schedules in a way that minimizes electricity costs and prioritizes renewable energy sources. For EV owners, charging at peak times can lead to higher costs, and often, users arent aware of when renewable energy is available. This app seeks to provide a solution by helping users automate charging times, thus saving money and reducing their environmental footprint. This is indeed a relevant issue…

STAKEHOLDERS

- Rens (CEO)
- Individual Users
- Enterprise Users
- Energy Providers
- Apperium

SUSTAINABILITY

The app indirectly promotes energy efficiency by encouraging users to charge during off-peak times or when renewable energy is available. This helps reduce the strain on the grid and supports a more balanced energy ecosystem. Internally, the app will be designed to minimize data transmission and processing energy requirements, optimizing its code to reduce energy consumption whenever possible.

HATEFUL AND CRIMINAL ACTORS

The technology could hypothetically be misused if data on users charging times or habits were somehow accessed without consent, potentially leading to privacy concerns or surveillance issues. However, it is not designed with any functionalities that would inherently allow for unlawful activities, such as surveillance or identity theft. Proper data protection measures, transparency in data usage, and adherence to privacy regulations should mitigate these risks.

DATA

Yes, we are aware of potential data pitfalls, such as subjectivity in user data (e.g., charging habits are personal), incompleteness in renewable energy data, and correlation/causation misunderstandings. To mitigate these, we will ensure transparency in data interpretation and rely on multiple reliable sources for energy data to ensure accuracy. However, given the complex nature of energy usage and variability, the app will focus on providing users with guidance rather than precise guarantees of cost savings or eco-impact.

FUTURE

With widespread adoption, the app could significantly shift charging behavior, leading to more balanced grid usage and a potential decrease in peak energy demands. Communities of eco-conscious users might form around optimized, sustainable charging practices.

PRIVACY

Yes, the app would register some personal data. Specifically, it may collect information related to users charging preferences, schedules, and possibly location data (if relevant to rate-specific charging availability). While this data is relatively minimal, it could still be used to infer user behavior and routines, making it essential to apply strong data protection measures and maintain transparency about data handling

INCLUSIVITY

There is a potential for built-in bias, particularly in the selection of user preferences and settings. For instance, users with predictable daily routines may benefit more than those with irregular schedules, potentially creating bias toward certain user behaviors. The app also assumes users are both cost-sensitive and eco-conscious, which might not apply universally. To address this, the app could offer customizable options that cater to a range of usage patterns and priorities.

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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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