



NAME: Real-Time Emotion Detection With CNN

**TICT**


DATE: May 1, 2025 2:13 PM

DESCRIPTION OF TECHNOLOGY
An A.i system which can easily analyse an individuals current emotional state through their facial expression.

IMPACT ON SOCIETY


Problem: From research, According to Kara-Yakoubian, M. (2022, January 17), found that mental health problems due to loneliness have been on the rise. When individuals lack supportive companions during emotional challenges, their mental health declines.

The problem I am trying to address is the aspect of lacking a support system.


HATEFUL AND CRIMINAL ACTORS

A criminal actor could hack the technology and therefore access a customer's current emotions, which could therefore lead the criminal actor to influence the customer in engaging in dangerous acts.


As an example, consider a hacker breaches into our client Bob's home expression detection A.i and discovers Bob is feeling sad at that moment. The hacker could then bombard Bob with a lot of messages and tweets which could further...

PRIVACY


Yes, the A.i system does take notice of what ethnicity the customer is and their face.

HUMAN VALUES

There could be a situation if the AI predicts a customer is sad a number of times when people are around the customer, they might begin to think the customer is always sad


STAKEHOLDERS

- Individuals who feel lonely at home


DATA

Yes, I am familiar with this and I do take the shortcomings into account while training the A.i
My data preparation process involves
- Balancing the images based on ethnicity and race

Additionally training the AI on a pre-trained model so the AI is more robust and doesn't sure from the lack of adequate data.


INCLUSIVITY

Yes, the technology could potentially have a built-in bias if I can not source data for all ethnicities or for all emotional expressions. It could become the case the technology doesn't detect a certain emotion well or a certain ethnic emotion.

TRANSPARENCY

Yes, it is easy to understand how the technology works due to the use of another system called GradCam which help in explaining what a vision AI is looking at when making its predictions.

SUSTAINABILITY

FUTURE

An increase in the emotional well-being of people. If the technology is fully developed, there is a chance if used by customers there would be a decrease in individuals who feel lonely and not heard.

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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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