



AI for Outlier Detection

Created by: boyanlazarov
Created on: May 12, 2025 8:20 AM
Changed on: May 12, 2025 8:52 AM

Context of use: Education
Level of education: Bachelor

Technology Impact Cycle Tool

AI

Impact on society

What impact is expected from your technology?

This category is only partial filled.

What is exactly the problem? Is it really a problem? Are you sure?

The problem which this AI tool aims to solve is the lost of time which the validation Engineers in NXP waste to check every single data point by clicking tough multiple graphs and checking for any major outliers.

Are you sure that this technology is solving the RIGHT problem?

This question has not been answered yet.

How is this technology going to solve the problem?

This question has not been answered yet.

What negative effects do you expect from this technology?

This question has not been answered yet.

In what way is this technology contributing to a world you want to live in?

This question has not been answered yet.

Now that you have thought hard about the impact of this technology on society (by filling out the questions above), what improvements would you like to make to the technology? List them below.

This question has not been answered yet.

Technology Impact Cycle Tool

AI

Hateful and criminal actors

What can bad actors do with your technology?

This category is only partial filled.

In which way can the technology be used to break the law or avoid the consequences of breaking the law?

There is no possible way in which it could be used for that purpose, due to the fact that this tool is simply checking post-silicon validation data of prototypes.

Can fakers, thieves or scammers abuse the technology?

This question has not been answered yet.

Can the technology be used against certain (ethnic) groups or (social) classes?

This question has not been answered yet.

In which way can bad actors use this technology to pit certain groups against each other? These groups can be, but are not constrained to, ethnic, social, political or religious groups.

This question has not been answered yet.

How could bad actors use this technology to subvert or attack the truth?

This question has not been answered yet.

Now that you have thought hard about how bad actors can impact this technology, what improvements would you like to make? List them below.

This question has not been answered yet.

Technology Impact Cycle Tool

AI

Privacy

Are you considering the privacy & personal data of the users of your technology?

This category is only partial filled.

Does the technology register personal data? If yes, what personal data?

No, As mentioned previously the tool is using only validation data Chip prototypes.

Do you think the technology invades the privacy of the stakeholders? If yes, in what way?

This question has not been answered yet.

Is the technology is compliant with prevailing privacy and data protection law? Can you indicate why?

This question has not been answered yet.

Does the technology mitigate privacy and data protection risks/ concerns (privacy by design)? Please indicate how.

This question has not been answered yet.

In which way can you imagine a future impact of the collection of personal data?

This question has not been answered yet.

Now that you have thought hard about privacy and data protection, what improvements would you like to make? List them below.

This question has not been answered yet.

Technology Impact Cycle Tool

AI

Human values

How does the technology affect your human values?

This category is only partial filled.

How is the identity of the (intended) users affected by the technology?

The tool aims to improve a bottleneck in the process of the validation engineers. And it could only be used as an advisor which propose a curtain amount of data points as outliers.

How does the technology influence the users' autonomy?

This question has not been answered yet.

What is the effect of the technology on the health and/or well-being of users?

This question has not been answered yet.

Now that you have thought hard about the impact of your technology on human values, what improvements would you like to make to the technology? List them below.

This question has not been answered yet.

Technology Impact Cycle Tool

AI

Stakeholders

Have you considered all stakeholders?

This category is only partial filled.

Who are the main users/targetgroups/stakeholders for this technology? Think about the intended context by answering these questions.

Name of the stakeholder

Validation Engineers, Nijmegen

How is this stakeholder affected?

-

Did you consult the stakeholder?

No

Are you going to take this stakeholder into account?

No

Name of the stakeholder

Fontys assessors

How is this stakeholder affected?

-

Did you consult the stakeholder?

No

Are you going to take this stakeholder into account?

No

Name of the stakeholder

Other IVN employees

How is this stakeholder affected?

-

Did you consult the stakeholder?

No

Are you going to take this stakeholder into account?

No

Technology Impact Cycle Tool

AI

Did you consider all stakeholders, even the ones that might not be a user or target group, but still might be of interest?

-

Now that you have thought hard about all stakeholders, what improvements would you like to make? List them below.

This question has not been answered yet.

Technology Impact Cycle Tool

AI

Data

Is data in your technology properly used?

This category is only partial filled.

Are you familiar with the fundamental shortcomings and pitfalls of data and do you take this sufficiently into account in the technology?

While I was doing the Data analysis for the AI solution, I found out multiple problems in my data such as it is hard for the engineers to provide me with data ,engineers don't have any way of marking a data point as an outlier. Other than that from the given data raw and clean I concluded that there were many data points which were removed because the engineer told the whole test as not good, which will confuse the AI. That is why I am planning to use unsupervised learning.

How does the technology organize continuous improvement when it comes to the use of data?

This question has not been answered yet.

How will the technology keep the insights that it identifies with data sustainable over time?

This question has not been answered yet.

In what way do you consider the fact that data is collected from the users?

This question has not been answered yet.

Now that you have thought hard about the impact of data on this technology, what improvements would you like to make? List them below.

This question has not been answered yet.

Technology Impact Cycle Tool

AI

Inclusivity

Is your technology fair for everyone?

This category is only partial filled.

Will everyone have access to the technology?

This question has not been answered yet.

Does this technology have a built-in bias?

If the data is examined in detail, it will be found that there should be far fewer outliers than normal data, as engineers define an outlier as an abnormally high or low value. However, aside from this, there are no biases because the data is equally distributed across the different test requirements, with each test requirement having exactly the same number of samples.

Does this technology make automatic decisions and how do you account for them?

This question has not been answered yet.

Is everyone benefitting from the technology or only a a small group?

Do you see this as a problem? Why/why not?

This question has not been answered yet.

Does the team that creates the technology represent the diversity of our society?

This question has not been answered yet.

Now that you have thought hard about the inclusivity of the technology, what improvements would you like to make? List them below.

This question has not been answered yet.

Technology Impact Cycle Tool

AI

Transparency

Are you transparent about how your technology works?

This category is only partial filled.

Is it explained to the users/stakeholders how the technology works and how the business model works?

yes, the technology is meant to be very user friendly. The user should only upload the data which he is examining and the model will return all of the values that are marked as an outliers.

If the technology makes an (algorithmic) decision, is it explained to the users/stakeholders how the decision was reached?

This question has not been answered yet.

Is it possible to file a complaint or ask questions/get answers about this technology?

This question has not been answered yet.

Is the technology (company) clear about possible negative consequences or shortcomings of the technology?

This question has not been answered yet.

Now that you have thought hard about the transparency of this technology, what improvements would you like to make? List them below.

This question has not been answered yet.

Technology Impact Cycle Tool

AI

Sustainability

Is your technology environmentally sustainable?

This category is only partial filled.

In what way is the direct and indirect energy use of this technology taken into account?

Due to the context of the project and the fact that the aim of the models is only to detect outliers from not so big datasets, I am confident to say that there won't be much energy consumption.

Do you think alternative materials could have been considered in the technology?

This question has not been answered yet.

Do you think the lifespan of the technology is realistic?

This question has not been answered yet.

What is the hidden impact of the technology in the whole chain?

This question has not been answered yet.

Now that you have thought hard about the sustainability of this technology, what improvements would you like to make? List them below.

This question has not been answered yet.

Technology Impact Cycle Tool

AI

Future

Did you consider future impact?

This category is only partial filled.

What could possibly happen with this technology in the future?

Due to the fact that this tool is only focused to solve a certain bottleneck for a certain amount of stakeholders, I can say that there won't be any drastic increases of the users.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one utopian scenario.

This question has not been answered yet.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one dystopian scenario.

This question has not been answered yet.

Would you like to live in one of this scenario's? Why? Why not?

This question has not been answered yet.

What happens if the technology (which you have thought of as ethically well-considered) is bought or taken over by another party?

This question has not been answered yet.

Impact Improvement: Now that you have thought hard about the future impact of the technology, what improvements would you like to make? List them below.

This question has not been answered yet.