

# Minifigures

An object detection AI model, designed to recognize Warhammer:40K miniatures and their armies.

Created by: LucDJ  
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Context of use: Other  
Level of education: Bachelor

# Technology Impact Cycle Tool

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## 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?**

My model is trying to solve the problem of new players not being able to recognize the units used by an opponent or teammate during a game of Warhammer:40k. The model will assist in the identification process of the armies on the table, which can otherwise be a somewhat tedious task.

### **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.*

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## 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?**

The model itself is not very usable to break the law, the dataset has some way it can be used to break the law. Because the training data for the model is sources from the internet, it cannot be commercially used. If someone does use it for that purpose, they would be breaking the law.

### **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.*

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### 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?**

In the current state the model does not register any personal data, since it is only a model that can recognize certain minifigures and weaponry from images. When the end-goal of creating an app to support the model is reached, then the use of personal data could be possible. For example to create an account and store your info, datasheets, etc.

#### **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.*

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## 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?

Since this model is used for object recognition, it does not have a direct way to influence a persons' identity.

### 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.*

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## 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**

Players of Warhammer:40K

**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**

Developers creating similar functionalities

**How is this stakeholder affected?**

-

**Did you consult the stakeholder?**

No

**Are you going to take this stakeholder into account?**

No

**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.*

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## 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?**

For this particular model, I am not fully aware if there might be a good enough consideration for these topics. A big pitfall in the model is the creative freedom of the player; they can make the models in any way they see fit, which increases the complexity of the dataset and making it pretty much impossible to complete.

### **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.*

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## 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?

The first versions of the model will have a built in bias towards the first unit it is trained with, since it is all it knows. By continuing to teach the model with new and different models, this bias could be reduced. For now this is not super impactful, since the current goal is for the model to only be able to recognize this particular army and its features.

### 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.*



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## 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?**

In the documentation belonging to the model, different aspects of the model are explained such as how the model is trained, which technology it uses, why it behaves in certain ways, etc.

### **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.*

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## 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?**

This depends on the distribution of the model, when it remains only in the current owners possession it will not have such a big impact. But if and when it will become available to a broader audience, this impact will be increased since there will be more devices doing similar calculations.

### **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.*

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## Future

Did you consider future impact?

*This category is only partial filled.*

### **What could possibly happen with this technology in the future?**

If this model gets continuously trained and improved with new data, it has a chance to grow out to cover the entire scope of playable armies (33) and provide an improvement to the overall Warhammer experience for all players

**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.*