Commercial Virtual try-on

Virtual Try-on (VTON) refers to the technology that allows users to try on clothing or accessories in a virtual environment, typically using generative models in AI. This technology digitally simulates how clothes, shoes, or accessories will look on a user without them physically wearing the items.

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Context of use: Work
Level of education: Bachelor

Impact on society

What impact is expected from your technology?

This category is not applicable for this technology.

Hateful and criminal actors

What can bad actors do with your technology?

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

It could also be used to impersonate someone else. This leads to privacy concerns and unlicensed usage.

The clothes in particular can be used to mislead customers into buying clothes as they might not represent the real clothing.

Can fakers, thieves or scammers abuse the technology?

Scammers could use the technology to create realistic fake images of people wearing clothes they never actually tried on.

Stolen product designs could be virtually displayed, even without the proper permission or licensing of models.

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

The technology may face challenges in generating virtual try-on images for individuals with larger sizes, as it has been primarily trained on slim models.

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.

By limiting the generation of images to one type of ethnic or social group.

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

By generating images that are not accurate to the original input images.

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

By enhancing the model's ability to generate accurate virtual try-on images for a diverse range of body types, ensuring it is not constrained by the training bias toward slimmer models.

Privacy

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

This category has not been filled yet.

Human values

How does the technology affect your human values?

This category is not applicable for this technology.

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
PB

How is this stakeholder affected?
Directly uses the technology

Did you consult the stakeholder?
Yes

Are you going to take this stakeholder into account?
Yes

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

Name of the stakeholder
Model

How is this stakeholder affected?
Model of PB which is licensed to provide their images.

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
Yes

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.

Data

Is data in your technology properly used?

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

Yes, there is a bias for slimmer models present. This could favor certain body types or skin tones.

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

I myself do not train the model so cannot improve its output but the models can be trained to learn from past errors by adapting the accuracy and output over iterations.

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

It would be logical to use version control to ensure images stay relevant over time. Furthermore, there should be data retention policies in place with experation periods. The chosen commercial option provides this as expected.

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

Users can access, correct or dlete data under GDPR & CCPA.

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

To address the AI bias by continuously refining datasets. To give users exact controls over the way their data is stored and deleted and by ensuring privacy through clear user consent policies.

Inclusivity

Is your technology fair for everyone?

Will everyone have access to the technology?

Yes, the commercial API is available through web, mobile or in our case through an API interface.

Does this technology have a built-in bias?

It can be if its trined on specific body types, genders of ethniticities.

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

AI determines the fit and look of the models.

Is everyone benefitting from the technology or only a a small group? Do you see this as a problem? Why/why not?

Users with digital devices and fashion knowledge. Brands that can use the tool to gain insights to better market their products.

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

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

Diversifying the training data for the AI-bias and giving the user more customization possibilities to ensure an accuruate and true to needs end-result.

Ensuring a better team diversity and showing this to the outside world to better reflect the real-world and needs of users.

Transparency

Are you transparent about how your technology works?

This category is not applicable for this technology.

Sustainability

Is your technology environmentally sustainable?

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

The technology in question can be run locally or on the cloud, differeing from energy usage. On cloud-based AI models, the energy consumption, efficiency and sustainability of the cloud provider can also differ per implementation.

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

No - since it's a software based solution.

Do you think the lifespan of the technology is realistic?

Definitely, the system needs to account for a huge throughput of images and the choice for technologies & architecture directly impacts that.

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

The training for AI models can be energy-intensive, together with running cloud data centers that indirectly incur environmental costs.

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

Optimizing the AI-model training
Using sustainable cloud services or data centers
Optimizing the system architecture to avoid unnecessary resource usage

Future

Did you consider future impact?

What could possibly happen with this technology in the future?

It can reduce the need for photoshoot, physical fitting rooms and returns. Furthermore, it could enable people from remote areas to shop for well fitted clothes online by ensuring correct fitting for different clothing sizes.

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.

By 2050 virtual AI Fitting is used in a standarized fashion. Customsers can make use of holographic displays or an AR/VR experience to view clothes right from their homes. By eleminating the need of physical stores and ensuring correct fitting of clothing, this can reduce the environmental footprint.

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.

By 2050 large corporations control fashion choices through AI alghoritms. AI-generated models replace real people & models. People rely on AI for their clothing choices and only the most popular styles get produced.

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

I would not like the love in the last sceneratio as it limits the creativity and personal feel of clothing. Of course, the 1st option seems like a cool future, one which could help stabilize the overgrowing clothing industry.

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

It could introduce a tech monopoly, where one company rules all generated clothing fitter images from which they could limit access to specific users. But it could also mean for a more transparent and globally accessible way of generating images if a (near) cost-free solution is found out.

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.

To prevent monopolization by maintaining open standards.
To promote sustainability through AI generated fashion.
To ensure equal access by providing solutions that are accessible to

everyone.