QUICKSCAN CANVAS Gym Pose AI Computer Vision Pose Detection for Fitness Feedback

NAME: Gym Pose AI Computer Vision Pose Detection for Fitness Feedback
DATE: May 15, 2026 1:04 PM

DESCRIPTION OF TECHNOLOGY
This technology uses computer vision and AI pose detection models to recognize human body keypoints in workout videos. By detecting joints and calculating angles, the system can analyze a persons movement and give feedback on exercise technique.

HUMAN VALUES

The technology can strengthen friendships by helping people train together and motivate each other. However, it could also create competition or embarrassment if one performs worse. It introduces new ways to get feedback without a coach, partly replacing personal guidance. Some might find it stigmatizing if their mistakes are shown. Overall, it can empower users to improve safely and feel more confident, but only if used respectfully and privately.

TRANSPARENCY

The technology will be explained in simple terms: it uses AI to detect joints and calculate angles for form feedback.
Users are informed what data is used, why it is used, and what happens with it.
No personal identity data is used or stored, videos are processed only to get pose keypoints and are deleted immediately.

IMPACT ON SOCIETY

People perform exercises with bad form which can increase the risk of injuries and reduces training results. Not everyone can afford a personal trainer or the gym hasn't have a any trainers that can help and beginners most of the time dont know if their movements are correct. It can help people train safer and more effectively.

STAKEHOLDERS

- Gym members
- Gym owners
- Gym trainers
- Developers

SUSTAINABILITY

The model runs locally or on small hardware and I avoid unnecessary cloud processing to limit energy use. I am trying to use smaller AI's. The goal is to keep energy usage as low as possible, especially for users who run it on their personal devices.

HATEFUL AND CRIMINAL ACTORS

The technology itself is not meant for illegal use but it could be misused. People can film others in the gym without premision. The data could also be used for stalking, blackmail or identity profiling. In extreme cases it might help commit fraud or be repurposed for surveillance. To prevent this data should be stored locally and only used with consent.

DATA

Yes. Pose estimation data can be incomplete, biased or inaccurate depending on camera angle, lighting and body type. This is a known limitation for AI based movement analysis. I take this into account by testing multiple videos, validating results, and not claiming 100% accuracy. The output is guidance only, not medical advice and a disclaimer is required to prevent overreliance.

FUTURE

In the future technologies like this could act as personal AI coaches. It can change how people train and lowering costs. This can reduce injuries but could also lead to over monitoring or unhealthy perfectionism. If adopted, ethical design, transparency and clear boundaries will be necessary to ensure positive societal impact.

PRIVACY

Yes, the system temporarily processes a video to created the body keypoints.
The video is not stored and is deleted after processing.
Only pose keypoints and angles are used for analysis..
No personal data is linked to the video.
Users give consent and the system provides guidance.
The output is guidance only and the system is not a medical device.

INCLUSIVITY

Dataset bias: videos mostly of young, fit, light skinned people
Camera/context bias: frontal, well-lit, tripod shots.
Labeler bias: good form defined by a few coaches.
Metric bias: only measuring angles over safe individual differences.
Device bias: requires newer phones excludes low-end users.
Feedback bias: public scores/shares push competition/shame.

FIND US ON WWW.TICT.IO

THIS CANVAS IS PART OF THE TECHNOLOGY IMPACT CYCLE TOOL. THIS CANVAS IS THE RESULT OF A QUICKSCAN. YOU CAN FILL OUT THE FULL TICT ON WWW.TICT.IO

QUICKSCAN CANVAS HELPSIDE Gym Pose AI Computer Vision Pose Detection for Fitness Feedback

NAME: Gym Pose AI Computer Vision Pose Detection for Fitness Feedback
DATE: May 15, 2026 1:04 PM

DESCRIPTION OF TECHNOLOGY
This technology uses computer vision and AI pose detection models to recognize human body keypoints in workout videos. By detecting joints and calculating angles, the system can analyze a persons movement and give feedback on exercise technique.

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.…

FIND US ON WWW.TICT.IO

THIS CANVAS IS PART OF THE TECHNOLOGY IMPACT CYCLE TOOL. THIS CANVAS IS THE RESULT OF A QUICKSCAN. YOU CAN FILL OUT THE FULL TICT ON WWW.TICT.IO

Fontys University of Applied Sciences

TICT