QUICKSCAN - CANVAS

MATLAB tool

NAME: MATLAB tool
DATE: May 15, 2026 3:07 AM
DESCRIPTION OF TECHNOLOGY
Calculation tool for cam designs

HUMAN VALUES

The technology does not affect users' personal identity with respect to personal data, privacy, or self-representation. However, it influences the professional roles and responsibilities of the intended users, who are design and systems engineers.

TRANSPARENCY

Yes, the technology's operation is explained to users and key stakeholders at a level appropriate to their roles. The tool is designed to be transparent in its operation, ensuring that users understand how results are generated and what assumptions underlie the calculations.

For end users (design engineers), the technology is explained through:
A clear and structured user interface that reflects the…

IMPACT ON SOCIETY

The problem addressed in this project is not the absence of a cam design method, but the limitations of the existing workflow (Cam Design Workflow 2.0).
The current approach relies on fragmented tools, manual steps, and limited validation, which makes it time-consuming, error-prone, and difficult to scale or reuse across different cam designs.

STAKEHOLDERS

- JBT Marel Design engineers
- JBT Marel Manufacturing and Process Engineers
- Project Supervisor

SUSTAINABILITY

The technology's direct energy use is relatively low and is primarily limited to the computational resources required to run the software. The tool operates on standard engineering workstations using MATLAB and does not require specialised hardware or continuous high-performance computing. As such, direct energy consumption is comparable to that of typical engineering design software and is considered negligible within the overall project context.

HATEFUL AND CRIMINAL ACTORS

The technology developed in this project is intended as an engineering decision-support tool. However, like many calculation and validation tools, it could potentially be misused to circumvent engineering standards or legal responsibilities if applied incorrectly or unethically.

One possible misuse is the intentional manipulation of input parameters to obtain favourable calculation results.

DATA

Engineering data are inherently subject to limitations, including measurement uncertainty, assumptions in analytical models, variability in material properties, and incompleteness in supplier or experimental datasets. In particular, lifetime and wear data often relies on simplified models or empirical test conditions that may not fully represent real operating environments.

FUTURE

In the future, the technology could evolve beyond its current role as a standalone engineering calculation tool and become a more integrated part of the overall mechanical design workflow. As additional modules are added, such as advanced dynamic analysis, manufacturability assessment, or automated optimisation, the tool could support more comprehensive design decisions earlier in the development process.

PRIVACY

No, the technology does not register or process personal data. The developed Cam Design Tool operates purely as a technical engineering calculation and validation tool. All inputs and outputs relate exclusively to mechanical, geometrical, material, and operational parameters, such as loads, velocities, material properties, and calculated lifetimes.

INCLUSIVITY

The technology does not contain intentional bias toward specific users or outcomes. However, like any engineering calculation tool, it does exhibit implicit technical bias arising from its underlying assumptions, data sources, and modelling choices.

The primary source of bias lies in the use of predefined models and supplier-based reference data.

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QUICKSCAN - CANVAS - HELPSIDE

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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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