

A large, white industrial robotic arm with a black gripper, positioned on the right side of the image. The arm is extended horizontally, with its gripper pointing downwards. The background is white with light blue concentric circles on the left and bottom right.

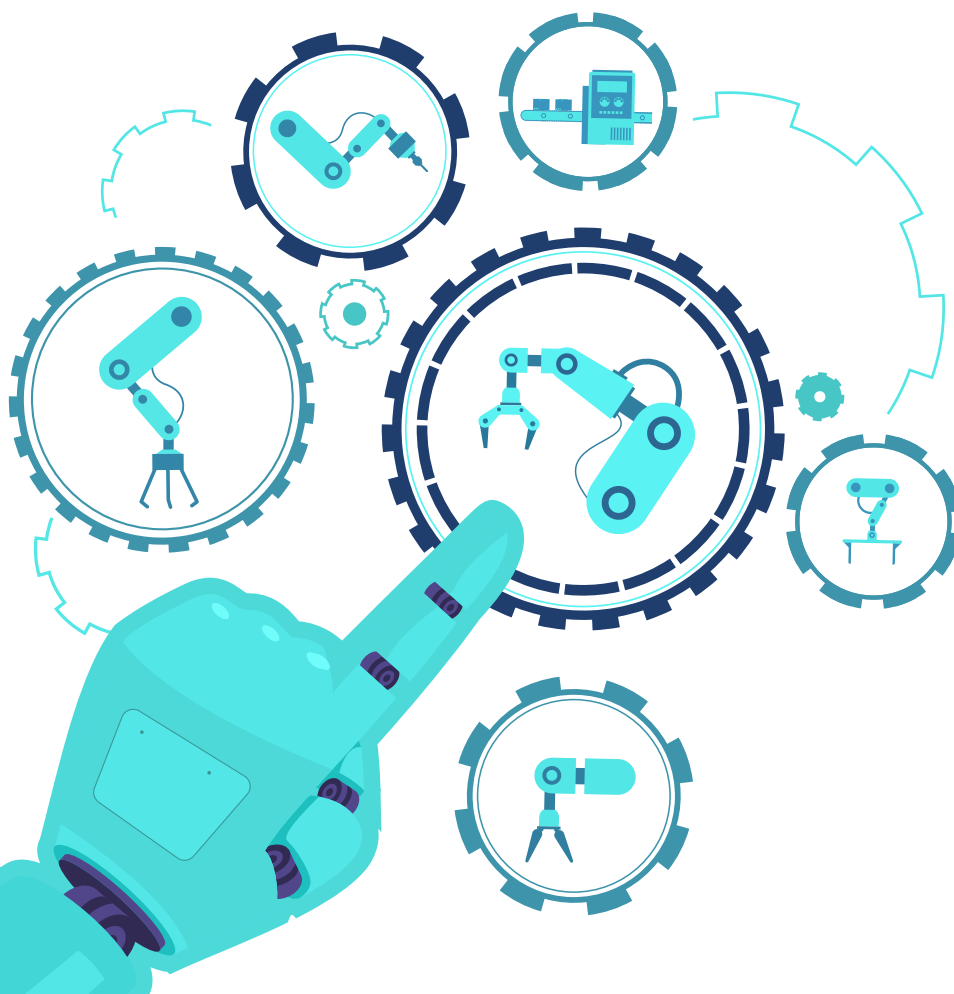
# Armoring Manufacturing with Computer Vision: Key Use Cases

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Gramener has helped pharmaceutical, beverages, milling, HVAC, cold chain, semiconductor, and logistics companies to weed out defects with:

- Predictive maintenance of machines
- Accurate set-up of machines
- Packaging optimization
- Adjustments to the process flow

# Some of the Most Sought-After Use-Cases Are



SWIPE >>



# Identifying Product Defects

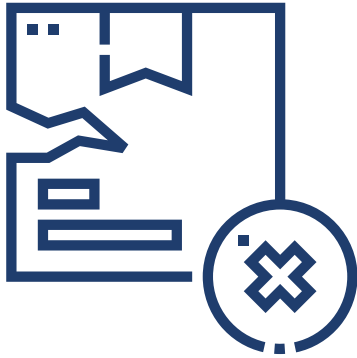
Defects in products can be traced to imperfections in design, manufacture, or marketing. Analysis of good and bad images helps to identify defects that can range from raw material quality, through incorrect components, leaking parts, scratched, dented, or soiled surfaces to damaged components.

# Identifying Assembly Defects

Defects that occur when a product is being assembled will cost a lot if detected at the end of the line.

Real-time monitoring helps to identify defects such as misaligned placements, loose soldering, misplaced drilling, weld marks, burn marks, and sink marks.





# Identifying Packaging Defects

Bar code and text reading can detect wrong labeling, incorrect user instructions, and language problems, while image analyses can identify broken seals, pinholes, and loose caps, and verify liquid fill levels, cap presence and position, and kit completeness.

# Adherence to SOPs

Continuous monitoring of videos and camera footage can spot anomalies in the production process, optimize it and reduce cycle time. Surveillance of warehouses, including loading and unloading operations, helps to protect staff from work hazards.





# Pest Detection

Images of perishable goods like fruits, vegetables, food products, meat, and fish can be inspected and classified in terms of texture, color, shape, size, and appearance (spots, wrinkles, freshness). Similarly, pest attacks and disease outbreaks can also be discovered early.



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