

Robots Simplify Piece Picking from Bulk

The Pain of Piles

During the manufacturing process, food tends to become disorganized and piled up in bulk. This presents a challenge since most machines have strict infeed requirements, including minimum spacing between products, specific orientation, and justification to one side.

Integrators are conscious of these requirements as humans are currently required to singulate pieces from bulk. The goal is to avoid piles of food and ensure a smooth process. Despite their best efforts, some processes result in a chaotic mess.

Examples:

- Piles of meat after going through a deboner
- Piles of frozen foods after going through instant quick freeze
- Piles of snack foods after floating in oil
- Piles of protein after being cut off a carcass
- Piles of produce being dumped out of a truck

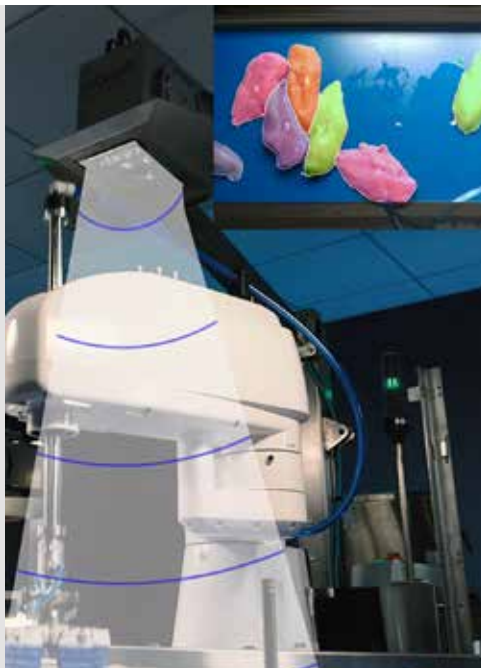
BUSINESS CHALLENGES

Movement on the Belt

One of the biggest challenges of using machine vision to pick pieces from a chaotic pile is that the pile may change as pieces are picked. Existing machine vision solutions mount a camera upstream of the robot pick area to avoid the camera capturing images blocked by the robot arm. When using a vision system upstream, there is a potential problem with detecting objects on a conveyor belt. For instance, if three apples are moving along the belt and touching each other, picking one might cause the neighboring apples to move. The robot picking the apples may not be aware of this movement, resulting in a missed pick.

Space is a Premium

Machine builders have tried using machines to create a single stream of products, but these machines consume valuable space, require constant maintenance, and lack reliability, ultimately affecting production.



Segmenting bulk chicken by looking directly into the robot pick area

INNOVATION MEETS EFFICIENCY

Soft Robotics is revolutionizing the food processing industry by delivering AI-enabled inspection and vision-guided robotic solutions.

Our proven piece-picking capabilities from bulk eliminates the burden of upstream singulation from processing lines. Deployed directly in-line, our solution is compact, saving valuable space and machine maintenance costs.



Empanadas in bulk coming out of the fryer

The system dashboard provides real-time, actionable product insights to optimize upstream processes and manage personnel. The result? An organized piece picking process, reducing the reliance on human labor, improving efficiencies, and increasing yield.