



Robotics

Robots can enhance and complement human efforts. Industrial robots have been around for some time, but the boundaries between humans and robots were distinct. The trend is that robots have become better at mimicking humans' *fine-motor skills*, as opposed to *gross-motor skills*. Early robots were automatons, simply repeating a move they had been taught; today's machine can react to their environment. Vast advances in robotics have been made, thanks to advances in camera technology and GPS.

Overview	Challenge	Solution	Results
Field to kitchen.	Labour shortages and sometimes hazardous work.	<p>Robotics in...</p> <ul style="list-style-type: none"> – <i>Agriculture</i>: plant & non-plant – <i>Primary processing</i>: including butchery – <i>Preparation</i>: sorting, defect removal and mixing – <i>Packaging</i> – <i>Delivery</i> <p><u>Great blog: 5 Ways Robotics Is Changing the Food Industry</u></p>	Better quality, sustainable food available at the convenience of the consumer.
Acute expertise to ensure success.	Manual assembly and/or inspection process allowed for human error and was inefficient.	Developed an automated manufacturing system for medical devices which form a key part of the company's regular products.	Allows the company to address market needs in a much shorter time, increasing potential for market penetration and manufacturing flexibility.
Quality control robotics.	Labour shortages.	Computer vision and deep learning to guide high-speed robotics systems to precisely identify, differentiate, and recover recyclables found in the waste stream, and storing data about each item it perceives.	<p>Less repetitive roles for workers, and better pick rates and bale purity (reducing human error).</p> <p><u>Read about the first recycling robot in Northern Ireland at Recyco!</u></p>