



Meat & Livestock Australia

In 2016, Australia exported more than 1M tonnes of beef, making this country one of the leading meat producers in the world.

MLA is working hard to keep Australia at the forefront of meat production globally with technological initiatives designed to ensure Australia's future as a global industry leader.

Wiley and MLA have partnered to perform four projects in this exciting field. Wiley meat industry specialists look forward to accelerating the delivery of powerful technologies, such as the augmented reality meat grading platform.

Compelling need for the project

The 'subjective' collection and assessment of meat grading has contributed to trust issues between producers and processors. MLA have stated that producers and feedlot operators are concerned about the precision of meat grading in Australia.

Meat graders are not to blame. Humans are simply not built to repeatedly make objective judgements day in day out.

In an American study of meat grading, it was found that 50% of meat samples were mis-graded in some way.

Augmented reality for meat grading—benefits for the Australian meat industry

MLA have partnered with the Wiley Innovation Team, on a research and development (R&D) project, to innovate meat grading using computer vision. The purpose of this research is to develop 'objective' measurement and decision support for meat grading staff throughout Australia.

The innovative technology will help strengthen Australia's position as the world's leading red meat producers; delivering high quality future supplies to domestic and international markets.

The AR platform, named ARG (Augmented Reality Grading App) facilitates faster, more consistent and precise meat grading; while taking full advantage of the experience and capabilities of the industry's meat graders.

The solution is designed to classify the colour of a meat sample, accurately determine the area of the latissimus dorsi muscle, and introduce handsfree scanning of meat sample tickets. These features have been demonstrated on a Vuzix m300 augmented reality headset, as well as on various hand-held devices.

Decision assistance for meat graders may lead to improved transparency and consistent outcomes for the meat industry. Increased precision has obvious benefits such as accuracy on a carcass-by-carcass basis and broader labour efficiencies, but there are also subtle flow-on positive impacts to the industry and processors.

Decision support is likely to bring about greater speed and decreased training periods for meat graders. Such a solution also has the potential to normalise grading performance across shift duration, between graders, between facilities and across processor groups.

Both the augmented reality market, and the platform developed through this research, show considerable potential. The successful demonstration of a meat grading application, in conjunction with the continuing development of augmented reality solutions, make it reasonable to expect augmented reality will play a substantial role in the meat industry in years to come. This platform will have much further potential as the technology advances.

The challenging scope Wiley delivered

This project consisted of two phases:

- A research phase reviewing and cataloguing relevant augmented reality projects, case studies and technology
- A proof of concept phase in which a prototype of an augmented reality application was developed for an AR head mounted display and tasked with reducing the subjectivity in MSA grading in a processing environment.



the project delivery company



MLA's purpose is to foster the long-term prosperity of the Australian red meat and livestock industry, by:

- delivering research and development that contributes to producer profitability, sustainability and global competitiveness;
- growing demand for red meat in Australia and overseas.

MLA is a service provider to the red meat industry, not an industry representative body or lobby group.

WILEY



Supporting our company value of **FUTURE FOCUS**, our Wiley Innovation team is committed to delivering exceptional market research, technological development and design thinking services to the food industry.

Wiley is passionate about creating a better future, and our innovation specialists are among the most skilled in the industry.

Wiley has been working with MLA for several years to deliver industry-leading insights, research and world-first technological developments.



Sean Starling, General Manager – R&D and Innovation, MLA.

“We can see the potential of augmented and virtual reality in many applications both on farm and in manufacturing.

On farm, augmented reality will become vital as more autonomous vehicles evolve and provide a silent service. These services will only report in when there is a decision for the producer to make. Donning on a pair of glasses will immediately take the producer to the location of the autonomous vehicle and the situation at hand will be presented in panoramic view for the producer to make a decision.

In processing plants, with advancements of objective measurement systems, operational staff will be able to dissect livestock and sub-primals more accurately than with the naked eye.

With processing equipment becoming more and more sophisticated, and by default complicated, mixed reality will be used by operators to start and troubleshoot equipment. Maintenance staff will use the same technology to fast track troubleshooting and repairing sophisticated equipment.”



Brett Wiskar, Wiley R&D and Innovation Director.

“We are really excited to be working with the MLA in research and innovation projects that will move the red meat industry forward into the digital era. We congratulate MLA on their foresight to investigate and invest in this technology.”



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