

## Augmented Reality for Pork Primal Classification Based on Quality Attributes

Assessment of pork quality is of immense importance to the Canadian pork industry as primal cuts with desirable attributes are sold at premium prices in international markets. Current methods for measuring pork quality in-line are mainly subjective. Fully automated systems are available for some primal quality attributes, but adoption has been limited due to high costs and operational requirements. Augmented reality (AR) is a technology that uses artificial intelligence to enable the superimposition of digital content over real-life scenes, thus reducing human error. This project involves the development of a new application that uses commercial wearable AR devices to classify pork primals based on the most important quality attributes required by international buyers who pay premium prices for such primals.

**RECIPIENT:**

AAFC

PI: Manuel Juarez

**TOTAL BUDGET:**

\$251,810

**PROJECT DATES:**

JAN 2022 –

DEC 2023

**PARTNERS:**

Olymel, Sunterra,  
HyLife, Alberta Pork,  
Canada Pork, CCSI,  
Pinaka Solutions,  
Beam Me Up

**AI FUNDING:**

\$157,410

**PROJECT TRL:**

Start: 3

End: 8

### APPLICATION

The AR technology will offer pork processing plants a low-cost, accessible, and accurate tool to perform objective measurements of pork primal cuts early in the processing line, allowing for real-time classification of pork cuts and the flexibility to use different domestic and international market standards. This will improve the productivity, efficiency and accuracy of the Alberta pork industry throughout the value chain and help advance the pork processing sector.

# ALBERTA INNOVATES CLEAN RESOURCES

SMART AGRICULTURE AND FOOD  
AGRI-FOOD INNOVATION – DATA AND DIGITAL SOLUTIONS

## PROJECT GOALS

The main objective of the project is to develop an accurate and efficient AR application which can objectively measure pork loin primal lean colour and marbling quality attributes to improve the classification systems in commercial pork processing systems throughout Alberta. Specific objectives include:

- To identify, assess and compare AR technology solutions capable of conducting the application.
- To develop a preliminary AR software to measure pork loin lean colour and marbling.
- To test the preliminary software using the candidate AR technologies under research conditions to conduct training and validation tests.
- To test the prototype AR system in commercial processing plants in order to optimize the process.

## BENEFITS TO ALBERTA

- Facilitate increased speed, consistency, and precision for pork classification, while taking full advantage of the capabilities of experienced operators.
- Provide real-time, objective assessment feedback while not interfering with ongoing operations at a processing plant which will also increase consistency in decision making by operators.
- Improve the productivity, efficiency, and accuracy of the Alberta pork industry throughout the value chain and help advance the pork processing sector.
- Create new jobs and business opportunities within the province of Alberta.
- Ultimately increase the competitiveness of Alberta pork in global markets.



4 Publications



1 Student Trained



1 New  
Product/Service



4 Project Jobs

## CURRENT STATUS

### MAR 2022

Work is underway to identify, assess, and purchase Augmented Reality technology solutions capable of conducting part (or all) of the application and to help eliminate that subjectivity which will be tested with software development.