

HORTGRO CA ENGINEERS WEBINAR · 3 JUNE 2026

The AI Revolution.

What comes next for engineers and operators?



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Your Partner in Fruit Storage



COMPLEXITY IS RISING FASTER THAN VISIBILITY

We cannot run tomorrow's complexity on yesterday's visibility.



Climate



Water



Energy & load-
shedding



Market access



Ports & logistics



Skilled labour



Regulation



Quality & margin

Too much data, too little time to watch it.

THE NEXT INDUSTRIAL SHIFT

From steam power to human judgement amplified by machines.

1.0	Mechanisation	Steam and water power. Machines start doing what muscle used to do.
2.0	Mass production	Electricity and the assembly line. Scale and standardisation arrive.
3.0	Automation	Computers, electronics and PLCs. Plants run on programmed logic.
4.0	Connected data	Sensors, IoT and cloud. Every machine starts producing data.
5.0	Humans + machines	Human judgement, machine speed. People stay in charge.

The advantage goes to people who learn to work with the tools: carefully, critically and without handing over full control.

AI IS NOT JUST ROBOTS AND CHATBOTS

The interface changed: now you instruct in plain language.

SOFTWARE

1.0

We write exact code

Humans spell out every step. Set-points, ladder logic, PLCs.

SOFTWARE

2.0

Machines learn from data

Models find the patterns themselves. Machine vision, forecasting.

SOFTWARE

3.0

We instruct in plain language

You explain the problem in English or Afrikaans, and it solves.

This sits inside Industry 5.0: humans and machines working together, not machines instead of humans.

AI IS A VERY FAST APPRENTICE

Your experience matters more, not less.



AI has speed

- Reads a 200 page manual in seconds
- Compares thousands of data points at once
- Drafts the report while you walk the floor



You have context

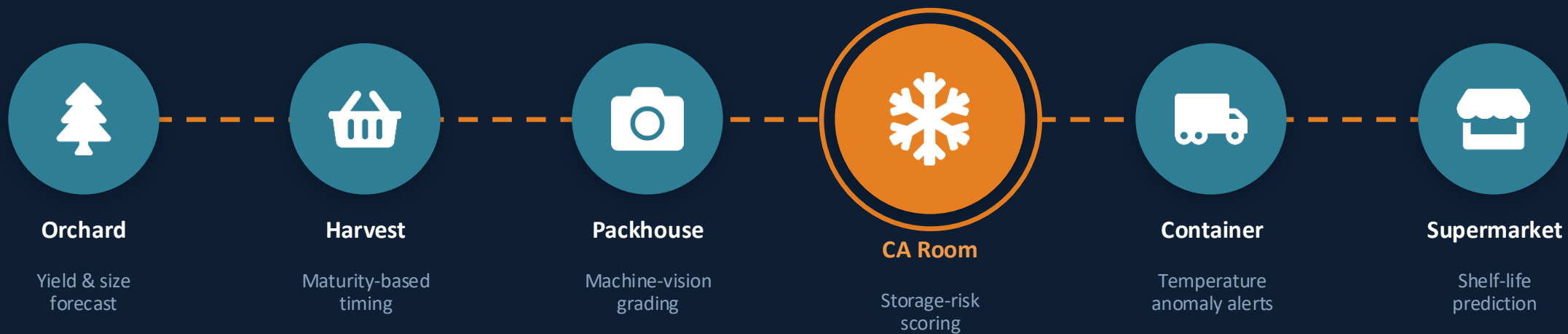
- Smell the room and hear the compressor
- Know this cultivar, the orchard its from
- Decide what is safe to do next
- Carry the responsibility and sign off

It reads, compares and drafts. You still check the work, decide what is safe, and sign off.

AI does not smell the room, hear the compressor, know the history, or carry the responsibility. You do.

ORCHARD TO SHELF: EVERY STEP LEAVES DATA

One connected fruit intelligence layer, the CA room is the high-leverage point.



Nine months in storage is too long to fly blind. Start where the fruit waits: the CA room.

WHAT CHANGES FIRST FOR US

AI watches the boring trends we do not have time to watch.



Room anomaly detection

Behaviour that drifts from similar rooms



N₂ usage benchmarking

"This room uses more than its peers"



Respiration increases

Rate of CO₂ production increasing



Cooling performance

Pull-down curves & airflow gaps



Door & leak detection

Unusual door events or pressure loss



Predictive maintenance

Compressor, valves, filters, media

None of this replaces you. It is the night-shift watchman that never blinks, then taps you on the shoulder.

AI FLAGGED ROOM 14 FOUR HOURS BEFORE THE ALARM DID

Systems warn when behaviour turns unusual, not only when a limit breaks.



**ANOMALY, ROOM 14**

"Room 14 is behaving differently from comparable rooms loaded with the same cultivar. O₂ consumption is slow. Check for a leak, sensor drift, pull sample"

LIVE ROOMS			
Rm 11	Rm 12	Rm 13	Rm 14
OK	OK	OK	CHECK
✓	✓	✓	⚠

A normal alarm shouts after the damage. AI systems whisper before it, but you still make the call.

WHAT YOU CAN TRY TODAY

Free tools on your phone tonight. Pick one and stick with it a week.

TOOLS TO DOWNLOAD:

ChatGPT

Claude

Gemini

Grok



"Draft a troubleshooting checklist for slow O₂ pull-down."



"Summarise these alarm logs into a shift handover."



"Build me an Excel sheet to compare room performance."



"Turn this controller manual into a 5 question training quiz."

Try one low-risk task this week: a draft, a summary, a quiz.

USE IT CAREFULLY: THE GUARDRAILS

Five rules, because AI can be confidently wrong.



1. Don't share sensitive data

No farm names, pricing, contracts, passwords, IP.



2. Anonymise first

"Room A, Cultivar B" strip it before you paste.



3. Never trust it blindly ,verify

Treat answers as drafts. Check against instruments, SOPs and experience.



4. Ask for its assumptions

"What did you assume? How sure are you?"



5. Keep a human in the loop

A person checks and signs off. Always.

The golden rule: do not paste anything you would hate to see on a WhatsApp group screenshot.

Start small.

Start safe.

Start with problems you already understand.

*The future does not belong to the youngest person in the room.
It belongs to the experienced person willing to learn one new tool.*



AI is a spanner, not a supervisor. Keep it in the toolbox, never let it run the plant alone.

Thank you.

What will you ask AI this week?

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Email **CHECKLIST** for the one-page AI Hygiene & Prompt Sheet.

