



ROBOTICS-READY AI IN VITICULTURE

PARTNERS



TREASURY
WINE ESTATES

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This Food Agility CRC evaluated how robotics and automation technologies can be deployed alongside AI machine learning prediction tools to improve prediction outcomes for Treasury Wine Estates.

“The results delivered very promising outcomes for the project team, which ultimately encourages continued development of in-field sensing and monitoring of vine growth features by robotic and autonomous vehicle.”

Dr Evan Webster, Yamaha Agriculture

THE CHALLENGE

Farmers regardless of size and scale face known challenges each season dealing with the uncertainty of seasonal variability of fruit yields. These include both operational challenges like harvest labour planning and scheduling post-farm logistics, and financial challenges like revenue forecasting and managing forward supply agreements. This is particularly the case for major commercial viticultural entities where seasonal fluctuations can have millions of dollars’ worth of consequences if not adequately accounted.

OUR APPROACH

By combining ground-level observations from cameras driven through the vines, with high resolution overhead imagery sourced from satellite and airborne platforms, this project delivered a comprehensive understanding of canopy and fruit development over the course of the growing season. Ground observations monitored fruit growth features such as bunch counts/vine and canopy leaf density, whilst overhead observation assisted with monitoring vine canopy health and total leaf area. Models developed using the data captured across the Australian and Californian vineyards suggest an 8 per cent improvement to block level predictive accuracies are possible from fruit-set onwards.



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