Student Internship Opportunities

There is an opportunity to work with/learn from an experienced team of science and engineering professionals on a diverse range of commercial green-fields R&D projects.

Data Effects

Data Effects is a South Australian technology company that is committed to providing positive social, economic and environmental outcomes for Australian communities. We work closely with government and private industry on a diverse range of technology-focussed agricultural, environmental and peri-urban research and development projects. Data Effects specialises in project management, complex field data acquisition, development and deployment of real-time (IoT) sensing platforms, cloud data management, bespoke data communication/visualisation, machine learning, machine to machine communication and automated systems.

Project summary

Disease prediction using real-time, in-crop condition monitoring, field data collection apps and Artificial Intelligence

Develop a cloud-based data management and Artificial Intelligence (AI) platform to securely store and automatically interrogate and classify images of plant disease that impact vineyards and market gardens (Botrytis, Downy Mildew, Sclerotinia & Powdery Mildew). Initial AI training will be carried out using reference images. Ongoing AI training will be achieved using images of disease occurrence collected by field operatives at the Tiers Vineyard and Cobbledick Market Gardens.

To facilitate data collection for AI training, we will develop an intuitive mobile interface to enable both experienced and inexperienced operatives to efficiently collect georeferenced and time-stamped field observations (including images) related to disease occurrence in vines and vegetable crops. All observations and images will be stored securely in the cloud-based data management and AI platform for validation by disease pathology experts from SARDI (on mobile phone or computer). Initially, all disease images collected during the project will be assigned disease ratings by field operatives, expert disease pathologists and the AI. This will allow ongoing AI training and review that will enable model refinement that will be pushed to the mobile application for automated disease-risk classification, reducing the need for manual examination by plant disease experts.

In addition to field observations, we will utilise a range of telecommunication technologies (LPWAN, Satellite, NB-IoT, Cat-M1) to monitor atmospheric and edaphic parameters throughout the Tiers Vineyard and Cobbledick Market Gardens. In-canopy parameters will include temperature, humidity and leaf wetness. Beyond the canopy, vineyard/farm-scale parameters will include near-surface soil moisture and localised rainfall that will be used to better understand the broader environment. These